



San Bernardino Valley Water Conservation District

Helping Nature Store Our Water

SPECIAL BOARD OF DIRECTORS MEETING AGENDA

Monday, October 19, 2020 – 1:30 p.m.

In accordance with [Governor Newsom's Executive Order N-25-20 and N-29-20](#), this meeting is being conducted via teleconference/Zoom. Anyone wishing to join the meeting can join via

Zoom: Call in (669) 900-6833, Meeting ID: 864 3060 6149

To join the Zoom Meeting online: <https://zoom.us/j/86430606149>

Note: Copies of staff reports and other documents relating to the items on this agenda are on file at the District office and are available for public review during normal District business hours. New information relating to agenda topics listed, received, or generated by the District after the posting of this agenda, but before the meeting, will be made available upon request at the District office and in the Agenda Package on the District's website. It is the intention of the San Bernardino Valley Water Conservation District to comply with the Americans with Disabilities Act (ADA) in all respects. If you need special assistance with respect to the agenda or other written materials forwarded to the members of the Board for consideration at the public meeting, or if as an attendee or a participant at this meeting you will need special assistance, the District will attempt to accommodate you in every reasonable manner. Please contact Athena Monge at (909) 793-2503 at least 48 hours prior to the meeting to inform her of your particular needs and to determine if accommodation is feasible. Please advise us at that time if you will need accommodations to attend or participate in meetings on a regular basis.

CALL TO ORDER

PLEDGE OF ALLEGIANCE

ROLL CALL

1. PUBLIC PARTICIPATION

Members of the public may address the Board of Directors on any item that is within the jurisdiction of the Board; however, no action may be taken on any item not appearing on the agenda unless the action is otherwise authorized by Subdivision (b) Section 54954.2 of the Government Code.

2. ACTION ITEMS

A. CALPERS UNFUND ACTUARIAL LIABILITY AND RESERVE LEVEL TARGETS AND ALLOCATION – 20 minutes (M#1740-2).....2

Presenter: Daniel Cozad

Recommendation: Review and consider approval of the 2020 UAL Payment and adjustments to Reserve Targets and Balances.

3. ADJOURN

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Redlands, CA 92373
Phone: 909.793.2503
Fax: 909.793.0188
www.sbvwd.org Email: info@sbvwd.org

BOARD OF DIRECTORS

Division 1:
Richard Corneille

Division 2:
David E. Raley

Division 3:
Robert Stewart

Division 4:
John Longville

Division 5:
Melody McDonald

GENERAL MANAGER

Daniel B. Cozad



Memorandum No. 1740-2

To: Board of Directors

From: Daniel Cozad, General Manager

Date: October 19, 2020

Subject: CalPERS Unfunded Actuarial Liability, Reserve Level Targets and Allocations

RECOMMENDATION

Review and consider approval of the 2020 UAL payment and adjustments to Reserve Targets and Balances.

BACKGROUND AND DISCUSSION

Upon Board approval of the audited District Reserve levels along with the 2020 Annual District Audit report at the October 14, 2020 Board meeting, staff is recommending one change to the target level for the Compensated Absences Reserve. The auditors use an actuarial estimate to identify the Compensated Absences liability. The recommended reserve target is above the amount in the Audit. This recommendation is because senior employees may cash out existing accrued leave.

At the Board's meeting on October 14, 2020, this item was tabled to today's special workshop. The Board requested additional information on how CalPERS forecasts costs and the factors that are included in its actuarial evaluation. A PowerPoint presentation is attached to provide further information, and this will be reviewed in today's workshop.

In 2015 the Board paid its Unfunded Actuarial Liability (UAL) for CalPERS and indicated its intent to continue to pay any UAL as included in the annual budget. CalPERS completed the Actuarial Evaluation Report earlier this year. Based on this new valuation, the District's current unfunded liability is \$387,402. This amount exceeds the budgeted amount, and staff recommends the changes allocating existing reserves to fund the UAL. This contribution for the UAL is not required but minimizes future liabilities and expenses primarily due to the difference between investment returns of the District's reserves and the 7.15% charged by CalPERS. District Staff is recommending the transfer of \$387,402 to fund the net liability fully.

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Daniel B. Cozad

WORKSHOP CONSIDERATION

CalPERS is an agency in the California executive branch that "manages pension benefits for more than 1.6 million California public employees, retirees, and their families". While any pension system is complex, CalPERS manages the largest public pension fund in the United States, with more than \$370 billion in assets and is underfunded by an estimated \$150 billion.

Pools are used for smaller employers or higher risk employee groups such as public safety to provide socialization of expenses and spread risks of actuarial decisions. The District participates in two pools, a Special District Miscellaneous Employee pool of over 400 employers and a PEPRAs, a Special District Miscellaneous Employee pool containing all employers with this benefit. District retirement is a tiny share of the overall pool. In researching background documents, the CFO for the City of Riverside did an excellent presentation on their CalPERS issues linked here <https://riversideca.legistar.com/View.ashx?M=F&ID=6646985&GUID=A43C4FA5-9D54-44D3-B5C1-0A16F9B84C7F> and was used in the background slides of today's presentation.

At the October 14th meeting, the Board asked several questions, and staff has compiled information on several of the local districts and cities for comparison as requested. The valuations linked below show the diversity of agency size and exposure.

Links to comparison evaluations

SBVMWD - <https://www.calpers.ca.gov/docs/actuarial-reports/2019/san-bernardino-valley-municipal-water-district-miscellaneous-first-tier-2019.pdf>

SAWPA - <https://www.calpers.ca.gov/docs/actuarial-reports/2019/santa-ana-watershed-project-authority-miscellaneous-2019.pdf>

MWDSC - <https://www.calpers.ca.gov/docs/actuarial-reports/2019/metropolitan-water-district-of-southern-california-miscellaneous-2019.pdf>

City of Redlands - <https://www.calpers.ca.gov/docs/actuarial-reports/2019/redlands-city-miscellaneous-2019.pdf>

City of San Bernardino - <https://www.calpers.ca.gov/docs/actuarial-reports/2019/san-bernardino-city-miscellaneous-2019.pdf>

Funding Status Projected to 2019

| | |
|---|--|
| Present Value of Projected Benefits (future cost) | \$4,944,192 |
| Normal Accrued Liability | \$4,107,473 |
| Plan's Market Value of Assets | \$3,657,311 |
| Unfunded Actuarial Liability (UAL) | \$450,162 (\$387,402 was project for 2020) |
| Funded Ratio | 89% |

Staff used the 2018 value because it was based on the actual pool status as opposed to the projected 2019 level.

UAL Payment Options

The total UAL, as calculated currently, is shown in the actuarial report on page 6. If the Board did not decide to make a lump sum one-time payment toward the UAL, it would be amortized over 17 years, as shown on Page 13 of the Actuarial Report attached to this memo. The other options from CalPERS include 15 and 10 years. CalPERS also allows employers to pay a portion of the UAL or pay the UAL

based on the Actuarial Report. The payoff enables the reduction of future UAL payments and potentially reduce the future normal costs.

- Continue the 17-year amortization – variable 5% ave.
 - \$5,000 to \$60,000 annual cost range total \$358,000
- Change to 15 year - \$51,321/yr interest cost \$320,000
- Change to 10 year - \$66,55/yr interest cost \$215,000
- UAL payoff can be paid up to the total \$450,162
- Interest Costs at 7.15% are \$32,187/yr, \$2,682/month

Budget Considerations

The District budgets for the minimum required UAL Payment option for 2020-2021 was \$21,000, up from \$13,221 for 2019-2020. On the Actuarial Report page 6, CalPERS lists assumptions on the future normal costs and UAL payments, as shown below. It is impossible to project the likely cost to pay any future project changes to the UAL without modeling from a contract actuary firm.

| | Required Contribution | Projected Future Employer Contributions (Assumes 7.00% Return for Fiscal Year 2019-20) | | | | |
|----------------------|------------------------------|---|----------------|----------------|----------------|----------------|
| Fiscal Year | 2021-22 | 2022-23 | 2023-24 | 2024-25 | 2025-26 | 2026-27 |
| Normal Cost % | 12.20% | 12.2% | 12.2% | 12.2% | 12.2% | 12.2% |
| UAL Payment | \$33,431 | \$42,000 | \$46,000 | \$50,000 | \$52,000 | \$53,000 |

FISCAL IMPACT

The District would see a reduction in reserve levels of \$387,402, as shown in the attached chart. The adjustment was proportioned by each enterprise's use of staff labor, as all benefits are allocated. There are adequate reserve levels to fund the UAL.

POTENTIAL MOTIONS

1. Move to approve full funding of the CalPERS UAL with adjustment to Reserve levels as presented with increases to the Compensated Absences Reserve.
2. Move to approve partial funding of the CalPERS UAL amount with smaller Reserve levels changes without changes to the Compensated Absences Reserve.
3. Pay UAL in accordance with a CalPERS approved amortization schedule with no commitment of reserves and higher annual costs
4. Move to table the item or refer to the Finance & Administration Committee.

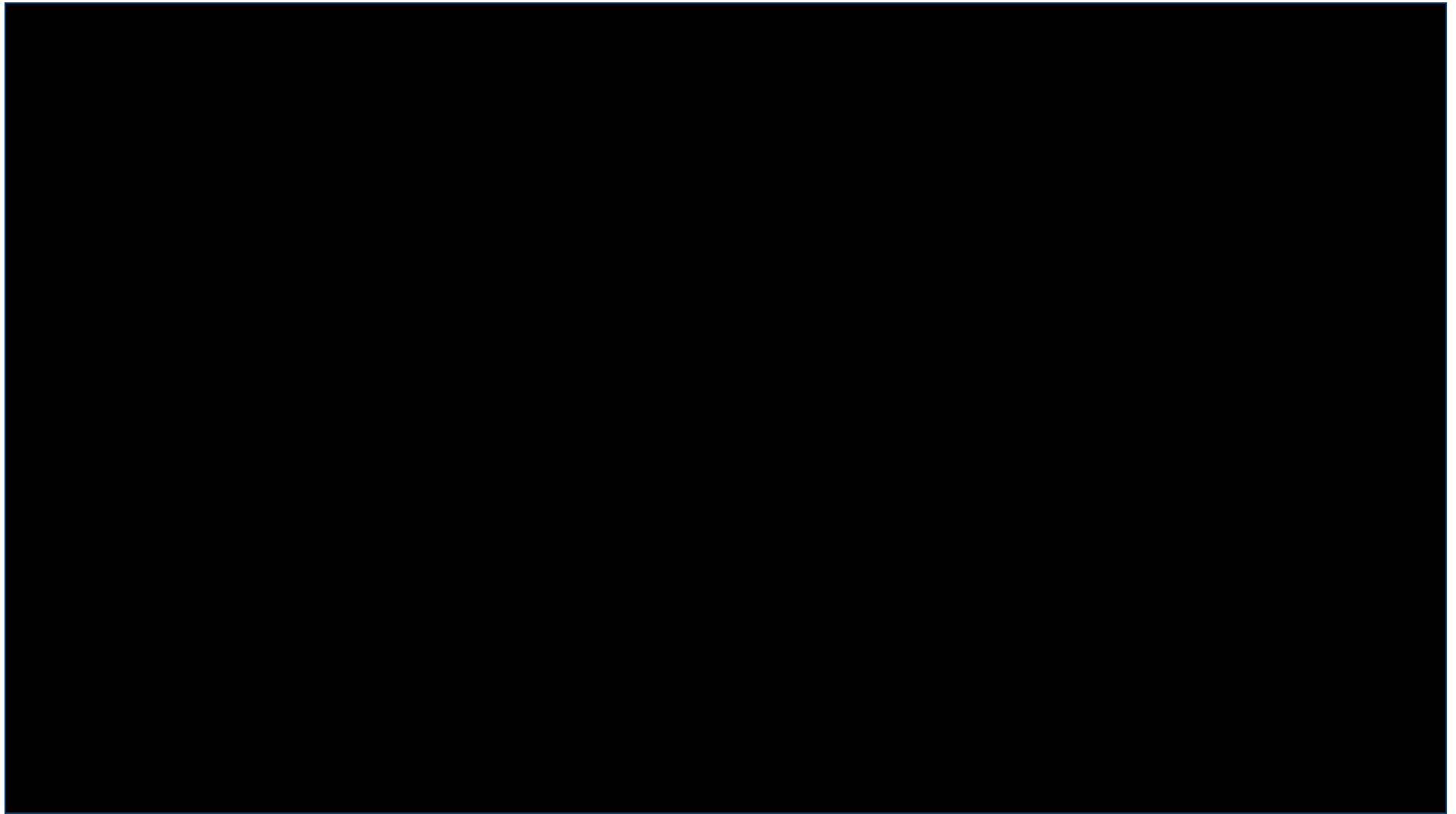
ATTACHMENTS OR MATERIALS

CalPERS 2019 Annual Valuation Report Classic and PEPRA pools

CalPERS UAL memo from August 12, 2015

Reserve Level Adjustments Chart

Powerpoint presentation for the meeting



CalPERS



WHAT IS CALPERS?

“The California Constitution provides that the CalPERS Board has plenary authority and fiduciary responsibility for the investment of moneys and administration of the system, is charged with the sole and exclusive fiduciary responsibility over the assets of the system, and is granted the sole and exclusive responsibility for administering the system in a manner that will assure prompt delivery of benefits and related services to system members and beneficiaries.” CalPERS is the largest pension in the US with over \$370 Billion in Assets.

CalPERS Funding

CALPERS PENSION FUNDING

3 Sources of Pension Funding

1 – Employer
Contribution rate established by CalPERS

2 – Employee
Contribution rate set by CalPERS; cost-sharing set by the member agency.

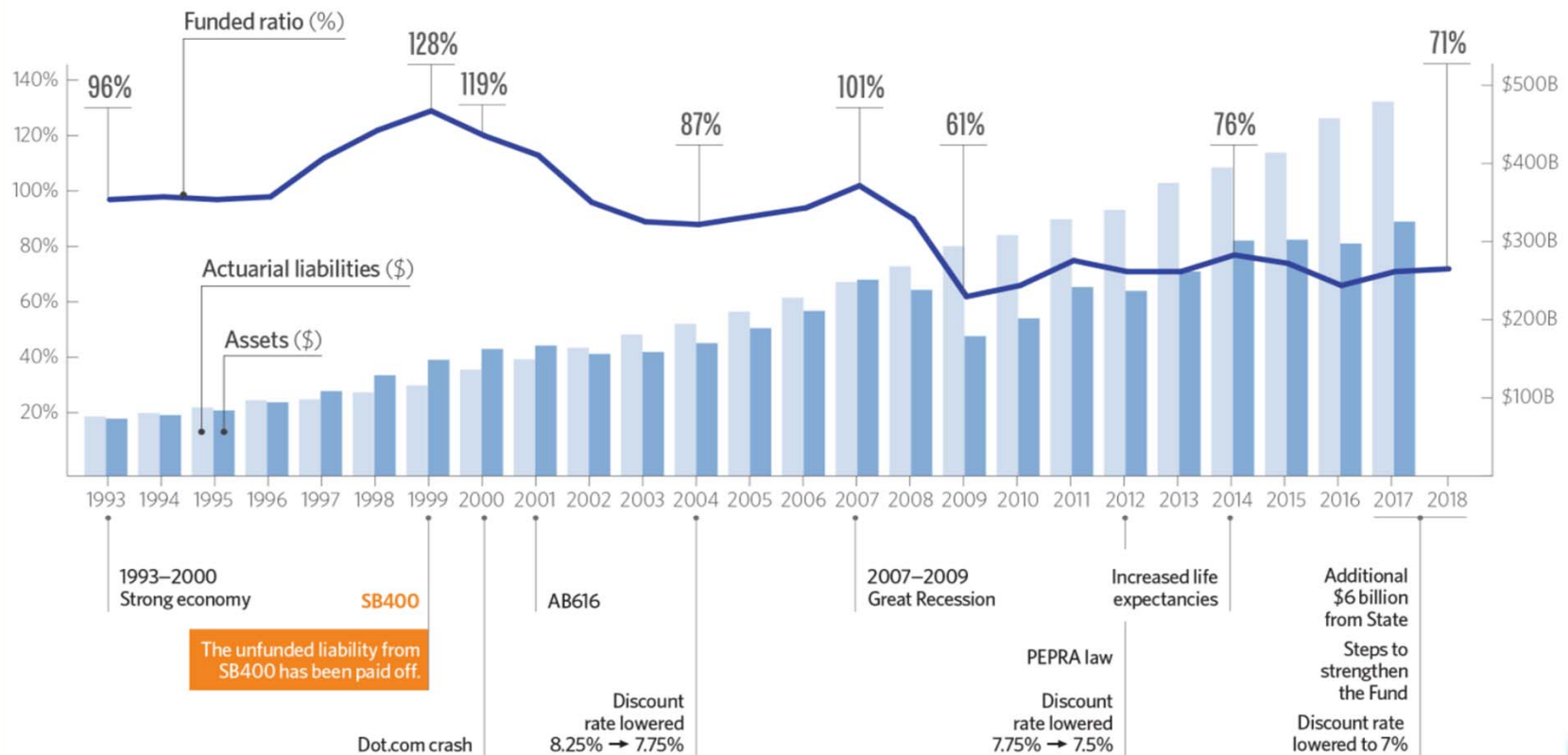
3 – Investment Income is influenced by CalPERS investment strategy & Market Performance



CalPERS Fund Sources



CalPERS Returns



Pension Investment Returns



Total Fund Market Value & Total Net Investment Return** 10-year Review (for FY end 6/30)

| | (in billions) | (%) |
|------|---------------|-------|
| 2019 | \$372.6 | 6.7% |
| 2018 | \$354.0 | 8.6% |
| 2017 | \$326.4 | 11.2% |
| 2016 | \$302.0 | 0.6% |
| 2015 | \$301.9 | 2.4% |
| 2014 | \$300.3 | 18.4% |
| 2013 | \$257.9 | 13.2% |
| 2012 | \$233.4 | 0.1% |
| 2011 | \$237.5 | 21.7% |
| 2010 | \$200.0 | 13.3% |

* Public Employees' Retirement Fund (PERF)

** Time-weighted rate of return net of investment expense

Total Net Investment Return* (for FY end 6/30)

| | |
|---------------------------|-------------|
| FY to date | 6.7% |
| 3 years | 8.8% |
| 5 years | 5.8% |
| 10 years | 9.1% |
| 20 years | 5.8% |
| 30 years | 8.1% |

* Net time-weighted rate of returns

<https://www.calpers.ca.gov/docs/forms-publications/facts-investment-pension-funding.pdf>

CalPERS Changes



Lower Discount Rate

Lowered the discount rate from 7.5% to 7% over three years
(assumed rate of return)

7.5%



7%

New Asset Allocation

Adopted new strategic asset allocation effective July 1, 2018



50% Global Equity
28% Fixed Income
13% Real Assets
8% Private Equity
1% Liquidity

Shorter Amortization

Shortened the amortization period for employers to pay their unfunded liability

30 yrs.



20 yrs.



significant
long-term savings



Funded Status
June 30, 2017



Funded Status
June 30, 2018

<https://www.calpers.ca.gov/page/about/organization/facts-at-a-glance/solid-foundation-for-the-future>

Future Benefit Cost Estimates



- ❧ When a new member enrolls into the retirement plan, the CalPERS actuary estimates the individual's pension benefit making assumptions for:
 - ❧ Life expectancy
 - ❧ Investment returns of the plan
 - ❧ Wage Increases
 - ❧ Years of life after retirement
 - ❧ Inflation
 - ❧ Specifics related to the benefit plan
- ❧ The result is today's assumed cost of the employee's total future pension payout during retirement.

District Plans

∞ 5 - Employees are
Classic Plan 2.5%@55

∞ 3 - Employees are
PEPRA Plan 2%@60

∞ All new staff are
PEPRA, unless vested
in CalPERS from
another employer



∞ PEPRA – Public
Employee Pension
Reform Act of 2013
limited options to new
CalPERS employees to
state levels

Cost Categories



- ☞ Employee (“Members”) and Employer Contributions are broken into two categories:
 - ☞ **1. Normal Cost:** benefits and expenses that have accrued during the given year and are expected to be accrued annually in the future with no changes to promised benefits
 - ☞ **2. Unfunded Accrued Liability (UAL):** amount of money needed to pay for benefits (earned so far plus benefits not yet earned) based on a member’s service. This amount is amortized to build the necessary assets over time to cover the liabilities. When a new member enrolls into the retirement plan, the CalPERS actuary estimates the individual’s pension benefit making assumptions for:

Unfunded Accrued Liability



- ❧ UAL is an actuarial term that refers to the difference between the values of assets and the estimated accrued liabilities of the plan
- ❧ UAL is the result of the actuarial assumptions that were not met.
- ❧ It is not an absolute number - it is adjusted annually based upon the five most recent years of experience
- ❧ UAL is based on an actuarial valuation at a particular point in time.
- ❧ The amount of the UAL today is impactful to member agencies' financial health and financial planning strategies.
- ❧ The most important objective is to ensure the contributions we make are expected to eliminate the UAL over a reasonable period of time.

District Funding Status and Future Costs



| | |
|---------------------------------------|-------------|
| Present Value Projected Benefits | \$4,944,192 |
| Normal Accrued Liability | \$4,107,473 |
| Plan's Market Value of Assets | \$3,657,311 |
| Unfunded Actuarial Liability (UAL) \$ | 450,162 |
| Funded Ratio | 89% |

| | Required Contribution | Projected Future Employer Contributions (Assumes 7.00% Return for Fiscal Year 2019-20) | | | | |
|---------------|--------------------------|---|----------|----------|----------|----------|
| Fiscal Year | 2021-22 | 2022-23 | 2023-24 | 2024-25 | 2025-26 | 2026-27 |
| Normal Cost % | 12.20% | 12.2% | 12.2% | 12.2% | 12.2% | 12.2% |
| UAL Payment | \$33,431 | \$42,000 | \$46,000 | \$50,000 | \$52,000 | \$53,000 |

Pool Funding Status



| | |
|---|----------------|
| 1. Plan's Accrued Liability | \$4,107,473 |
| 2. Projected UAL balance at 6/30/2019 | 416,357 |
| 3. Pool's Accrued Liability ¹ | 18,394,114,919 |
| 4. Sum of Pool's Individual Plan UAL Balances at 6/30/2019 ¹ | 4,268,374,183 |
| 5. Pool's 2018/19 Investment (Gain)/Loss ¹ | 68,711,010 |
| 6. Pool's 2018/19 Non-Investment (Gain)/Loss ¹ | 70,985,020 |
| 7. Plan's Share of Pool's Investment (Gain)/Loss: $[(1) - (2)] \div [(3) - (4)] \times (5)$ | 17,954 |
| 8. Plan's Share of Pool's Non-Investment (Gain)/Loss: $(1) \div (3) \times (6)$ | 15,851 |
| 9. Plan's New (Gain)/Loss as of 6/30/2019: $(7) + (8)$ | 33,806 |
| 10. Other Changes in the UAL ² | 0 |

¹ Does not include plans that transferred to Pool on the valuation date.

² May include Golden Handshakes, Service Purchases, etc. See Schedule of Plan's Amortization Bases for details.

Budget for Normal Costs



∞ The table shows history and future projections of “Normal Cost” as a percentage of payroll

| Fiscal Year | Employer Normal Cost |
|--------------------|-----------------------------|
| 2016 - 17 | 10.069% |
| 2017 - 18 | 10.110% |
| 2018 - 19 | 10.609% |
| 2019 - 20 | 11.432% |
| 2020 - 21 | 12.361% |
| 2021 - 22 | 12.20% |

Budget Options for UAL

Amortization Schedule and Alternatives

| Date | <u>Current Amortization Schedule</u> | | <u>Alternate Schedules</u> | | | |
|-----------|--------------------------------------|---------|-----------------------------|---------|-----------------------------|---------|
| | Balance | Payment | <u>15 Year Amortization</u> | | <u>10 Year Amortization</u> | |
| | | | Balance | Payment | Balance | Payment |
| 6/30/2021 | 483,507 | 33,431 | 483,507 | 51,321 | 483,507 | 66,551 |
| 6/30/2022 | 482,769 | 41,664 | 464,266 | 51,321 | 448,512 | 66,551 |
| 6/30/2023 | 473,465 | 45,537 | 443,678 | 51,321 | 411,067 | 66,551 |
| 6/30/2024 | 459,501 | 50,026 | 421,649 | 51,321 | 371,001 | 66,551 |
| 6/30/2025 | 439,918 | 51,755 | 398,078 | 51,321 | 328,130 | 66,550 |
| 6/30/2026 | 417,177 | 53,072 | 372,857 | 51,321 | 282,259 | 66,550 |
| 6/30/2027 | 391,481 | 54,422 | 345,870 | 51,321 | 233,177 | 66,551 |
| 6/30/2028 | 362,590 | 55,814 | 316,994 | 51,320 | 180,659 | 66,551 |
| 6/30/2029 | 330,237 | 57,240 | 286,098 | 51,321 | 124,464 | 66,550 |
| 6/30/2030 | 294,142 | 58,704 | 253,038 | 51,320 | 64,337 | 66,551 |
| 6/30/2031 | 254,008 | 60,214 | 217,665 | 51,321 | | |
| 6/30/2032 | 209,503 | 56,817 | 179,815 | 51,321 | | |
| 6/30/2033 | 165,395 | 53,190 | 139,315 | 51,320 | | |
| 6/30/2034 | 121,951 | 47,522 | 95,981 | 51,320 | | |
| 6/30/2035 | 81,331 | 39,365 | 49,614 | 51,321 | | |
| 6/30/2036 | 46,304 | 26,261 | | | | |
| 6/30/2037 | 22,380 | 18,077 | | | | |
| 6/30/2038 | 5,249 | 5,430 | | | | |
| 6/30/2039 | | | | | | |

Budget Implications and Options for UAL Payment

- ⌘ Continue the 17 year amortization – variable 5% ave
 - ⌘ \$5,000 to \$60,000 annual cost range total \$358K
- ⌘ Change to 15 year - \$51,321/yr interest cost \$320K
- ⌘ Change to 10 year - \$66,55/yr interest cost \$215K
- ⌘ UAL payoff can be paid up to the total \$450,162
- ⌘ Interest Costs at 7.15% are \$32,187/yr \$2,682/mo

Investment Return Scenarios



- ❧ Normal cost stay constant
- ❧ UAL payment would increase
- ❧ Prepayment of costs reduces risk in future years

| Assumed Annual Return From 2019-20 through 2022-23 | Projected Employer Contributions | | | |
|---|----------------------------------|----------|----------|-----------|
| | 2022-23 | 2023-24 | 2024-25 | 2025-26 |
| 1.0% | | | | |
| Normal Cost | 12.2% | 12.2% | 12.2% | 12.2% |
| UAL Contribution | \$47,000 | \$62,000 | \$83,000 | \$107,000 |
| 4.0% | | | | |
| Normal Cost | 12.2% | 12.2% | 12.2% | 12.2% |
| UAL Contribution | \$44,000 | \$54,000 | \$67,000 | \$80,000 |
| 7.0% | | | | |
| Normal Cost | 12.2% | 12.2% | 12.2% | 12.2% |
| UAL Contribution | \$42,000 | \$46,000 | \$50,000 | \$52,000 |
| 9.0% | | | | |
| Normal Cost | 12.5% | 12.7% | 13.0% | 13.2% |
| UAL Contribution | \$41,000 | \$42,000 | \$43,000 | \$39,000 |
| 12.0% | | | | |
| Normal Cost | 12.5% | 12.7% | 13.0% | 13.2% |
| UAL Contribution | \$38,000 | \$34,000 | \$0 | \$0 |

These projections reflect the impact of the CalPERS risk mitigation policy, which reduces the discount rate when investment returns exceed specified trigger points.

July 2020

**Miscellaneous Plan of the San Bernardino Valley Water Conservation District
(CalPERS ID: 4303312904)
Annual Valuation Report as of June 30, 2019**

Dear Employer,

Attached to this letter, you will find the June 30, 2019 actuarial valuation report of your CalPERS pension plan. **Provided in this report is the determination of the minimum required employer contributions for fiscal year 2021-22.** In addition, the report contains important information regarding the current financial status of the plan as well as projections and risk measures to aid in planning for the future.

Because this plan is in a risk pool, the following valuation report has been separated into two sections:

- Section 1 contains specific information for the plan including the development of the current and projected employer contributions, and
- Section 2 contains the Risk Pool Actuarial Valuation appropriate to the plan as of June 30, 2019.

Section 2 can be found on the CalPERS website (www.calpers.ca.gov). From the home page, go to "*Forms & Publications*" and select "*View All*". In the search box, enter "*Risk Pool*" and from the results list download the Miscellaneous or Safety Risk Pool Actuarial Valuation Report as appropriate.

Your June 30, 2019 actuarial valuation report contains important actuarial information about your pension plan at CalPERS. Your assigned CalPERS staff actuary, whose signature appears in the Actuarial Certification section on page 1, is available to discuss the report with you after August 1, 2020.

Actuarial valuations are based on assumptions regarding future plan experience including investment return and payroll growth, eligibility for the types of benefits provided, and longevity among retirees. The CalPERS Board of Administration adopts these assumptions after considering the advice of CalPERS actuarial and investment teams and other professionals. Each actuarial valuation reflects all prior differences between actual and assumed experience and adjusts the contribution rates as needed. This valuation is based on an investment return assumption of 7.0% which was adopted by the board in December 2016. Other assumptions used in this report are those recommended in the CalPERS Experience Study and Review of Actuarial Assumptions report from December 2017.

Required Contribution

The exhibit below displays the minimum employer contributions, before any cost sharing, for fiscal year 2021-22 along with estimates of the required contributions for fiscal year 2022-23. Member contributions other than cost sharing (whether paid by the employer or the employee) are in addition to the results shown below. **The employer contributions in this report do not reflect any cost sharing arrangements you may have with your employees.**

| Fiscal Year | Employer Normal Cost Rate | Employer Amortization of Unfunded Accrued Liability |
|--------------------------|---------------------------|---|
| 2021-22 | 12.20% | \$33,431 |
| <i>Projected Results</i> | | |
| 2022-23 | 12.2% | \$42,000 |

The actual investment return for fiscal year 2019-20 was not known at the time this report was prepared. The projections above assume the investment return for that year would be 7.00%. ***To the extent the actual investment return for fiscal year 2019-20 differs from 7.00%, the actual contribution requirements for fiscal year 2022-23 will differ from those shown above.*** For additional details regarding the assumptions and methods used for these projections please refer to the "Projected Employer Contributions" in the "Highlights and Executive Summary" section. This section also contains projected required contributions through fiscal year 2026-27.

Changes from Previous Year's Valuation

The CalPERS Board of Administration has adopted a new amortization policy effective with the June 30, 2019 actuarial valuation. The new policy shortens the period over which actuarial gains and losses are amortized from 30 years to 20 years with the payments computed as a level dollar amount. In addition, the new policy does not utilize a 5-year ramp-up and ramp-down on Unfunded Accrued Liability (UAL) bases attributable to assumption and method changes and non-investment gains/losses. The new policy does not utilize a 5-year ramp-down on investment gains/losses. These changes apply only to new UAL bases established on or after June 30, 2019.

Further descriptions of general changes are included in the "Highlights and Executive Summary" section and in Appendix A, "Actuarial Methods and Assumptions." The effects of the changes on the required contributions are included in the "Reconciliation of Required Employer Contributions" section.

Questions

We understand that you might have some questions about these results. While we are very interested in discussing these results with your agency, in the interest of allowing us to give every public agency their results, we ask that you wait until after August 1, 2020 to contact us with actuarial questions. If you have other questions, you may call the Customer Contact Center at (888)-CalPERS or **(888-225-7377)**.

Sincerely,

SCOTT TERANDO
Chief Actuary



**Actuarial Valuation
as of June 30, 2019**

**for the
Miscellaneous Plan
of the
San Bernardino Valley Water Conservation
District
(CalPERS ID: 4303312904)**

**Required Contributions
for Fiscal Year
July 1, 2021 - June 30, 2022**

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Section 2 – Risk Pool Actuarial Valuation Information

Section 1

CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM

Plan Specific Information for the Miscellaneous Plan of the San Bernardino Valley Water Conservation District

**(CalPERS ID: 4303312904)
(Valuation Rate Plan ID: 1510)**

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Actuarial Certification

Section 1 of this report is based on the member and financial data contained in our records as of June 30, 2019 which was provided by your agency and the benefit provisions under your contract with CalPERS. Section 2 of this report is based on the member and financial data as of June 30, 2019 provided by employers participating in the Miscellaneous Risk Pool to which the plan belongs and benefit provisions under the CalPERS contracts for those agencies.

As set forth in Section 2 of this report, the pool actuaries have certified that, in their opinion, the valuation of the risk pool containing your Miscellaneous Plan has been performed in accordance with generally accepted actuarial principles consistent with standards of practice prescribed by the Actuarial Standards Board, and that the assumptions and methods are internally consistent and reasonable for the risk pool as of the date of this valuation and as prescribed by the CalPERS Board of Administration according to provisions set forth in the California Public Employees' Retirement Law.

Having relied upon the information set forth in Section 2 of this report and based on the census and benefit provision information for the plan, it is my opinion as the plan actuary that the Unfunded Accrued Liability amortization bases as of June 30, 2019 and employer contribution as of July 1, 2021 have been properly and accurately determined in accordance with the principles and standards stated above.

The undersigned is an actuary for CalPERS, a member of both the American Academy of Actuaries and Society of Actuaries and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

DANIEL MILLER, ASA, MAAA
Associate Pension Actuary, CalPERS

Highlights and Executive Summary

- **Introduction**
- **Purpose of Section 1**
- **Required Employer Contributions**
- **Additional Discretionary Employer Contributions**
- **Plan's Funded Status**
- **Projected Employer Contributions**
- **Cost**
- **Changes Since the Prior Year's Valuation**
- **Subsequent Events**

Introduction

This report presents the results of the June 30, 2019 actuarial valuation of the Miscellaneous Plan of the San Bernardino Valley Water Conservation District of the California Public Employees' Retirement System (CalPERS). This actuarial valuation sets the required employer contributions for fiscal year 2021-22.

Purpose of Section 1

This Section 1 report for the Miscellaneous Plan of the San Bernardino Valley Water Conservation District of CalPERS was prepared by the plan actuary in order to:

- Set forth the assets and accrued liabilities of this plan as of June 30, 2019;
- Determine the minimum required employer contribution for this plan for the fiscal year July 1, 2021 through June 30, 2022; and
- Provide actuarial information as of June 30, 2019 to the CalPERS Board of Administration and other interested parties.

The pension funding information presented in this report should not be used in financial reports subject to GASB Statement No. 68 for a Cost Sharing Employer Defined Benefit Pension Plan. A separate accounting valuation report for such purposes is available from CalPERS and details for ordering are available on our website.

The measurements shown in this actuarial valuation may not be applicable for other purposes. The employer should contact their actuary before disseminating any portion of this report for any reason that is not explicitly described above.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; changes in actuarial policies; and changes in plan provisions or applicable law.

Assessment and Disclosure of Risk

This report includes the following risk disclosures consistent with the recommendations of Actuarial Standards of Practice No. 51 and recommended by the California Actuarial Advisory Panel (CAAP) in the Model Disclosure Elements document:

- A "Scenario Test," projecting future results under different investment income returns.
- A "Sensitivity Analysis," showing the impact on current valuation results using alternative discount rates of 6.0% and 8.0%.
- A "Sensitivity Analysis," showing the impact on current valuation results assuming rates of mortality are 10% lower or 10% higher than our current mortality assumptions adopted in 2017.
- Plan maturity measures indicating how sensitive a plan may be to the risks noted above.

Required Employer Contributions

| | Fiscal Year |
|---|----------------|
| Required Employer Contributions | 2021-22 |
| Employer Normal Cost Rate | 12.20% |
| <i>Plus, Either</i> | |
| 1) Monthly Employer Dollar UAL Payment | \$2,785.92 |
| <i>Or</i> | |
| 2) Annual UAL Prepayment Option* | \$32,319 |
| The total minimum required employer contribution is the sum of the Plan's Employer Normal Cost Rate (expressed as a percentage of payroll) plus the Employer Unfunded Accrued Liability (UAL) Contribution Amount (billed monthly in dollars). | |
| * Only the UAL portion of the employer contribution can be prepaid (which must be received in full no later than July 31). Any prepayment totaling over \$5 million requires a 72-hour notice email to FCSD_public_agency_wires@calpers.ca.gov . Plan Normal Cost contributions will be made as part of the payroll reporting process. If there is contractual cost sharing or other change, this amount will change. | |
| In accordance with Sections 20537 and 20572 of the Public Employees' Retirement Law, if a contracting agency fails to remit the required contributions when due, interest and penalties may apply. | |

| | Fiscal Year 2020-21 | Fiscal Year 2021-22 |
|--|------------------------|------------------------|
| Development of Normal Cost as a Percentage of Payroll¹ | | |
| Base Total Normal Cost for Formula | 19.695% | 19.55% |
| Surcharge for Class 1 Benefits ² | | |
| a) FAC 1 | 0.619% | 0.61% |
| Phase out of Normal Cost Difference ³ | 0.000% | 0.00% |
| Plan's Total Normal Cost | 20.314% | 20.16% |
| Formula's Expected Employee Contribution Rate | 7.953% | 7.96% |
| Employer Normal Cost Rate | 12.361% | 12.20% |
| Projected Payroll for the Contribution Fiscal Year | \$670,478 | \$713,822 |
| Estimated Employer Contributions Based on Projected Payroll | | |
| Plan's Estimated Employer Normal Cost | \$82,878 | \$87,086 |
| Plan's Payment on Amortization Bases ⁴ | 21,794 | 33,431 |
| % of Projected Payroll (illustrative only) | 3.250% | 4.68% |
| Estimated Total Employer Contribution | \$104,672 | \$120,517 |
| % of Projected Payroll (illustrative only) | 15.611% | 16.88% |

¹ The results shown for fiscal year 2020-21 reflect the prior year valuation and may not take into account any lump sum payment, side fund payoff, or rate adjustment made after April 30, 2019.

² Section 2 of this report contains a list of Class 1 benefits and corresponding surcharges for each benefit.

³ The normal cost difference is phased out over a five-year period. The phase out of normal cost difference is 100% for the first year of pooling and is incrementally reduced by 20% of the original normal cost difference for each subsequent year. This is non-zero only for plans that joined a pool within the past 5 years. Most plans joined a pool June 30, 2003, when risk pooling was implemented.

⁴ See Schedule of Plan's Amortization Bases.

Additional Discretionary Employer Contributions

The minimum required employer contribution towards the Unfunded Accrued Liability (UAL) for this rate plan for the 2021-22 fiscal year is \$33,431. CalPERS allows employers to make additional discretionary payments (ADPs) at any time and in any amount. These optional payments serve to reduce the UAL and future required contributions and can result in significant long-term savings. Employers can also use ADPs to stabilize annual contributions as a fixed dollar amount, percent of payroll or percent of revenue.

Provided below are select ADP options for consideration. Making such an ADP during fiscal year 2021-22 does not require an ADP be made in any future year, nor does it change the remaining amortization period of any portion of unfunded liability. For information on permanent changes to amortization periods, see the "Amortization Schedule and Alternatives" section of the report.

If you are considering making an ADP, please contact your actuary for additional information.

Minimum Required Employer Contribution for Fiscal Year 2021-22

| Estimated Normal Cost | Minimum UAL Payment | ADP | Total UAL Contribution | Estimated Total Contribution |
|-----------------------|---------------------|-----|------------------------|------------------------------|
| \$87,086 | \$33,431 | \$0 | \$33,431 | \$120,517 |

Alternative Fiscal Year 2021-22 Employer Contributions for Greater UAL Reduction

| Funding Target | Estimated Normal Cost | Minimum UAL Payment | ADP ¹ | Total UAL Contribution | Estimated Total Contribution |
|----------------|-----------------------|---------------------|------------------|------------------------|------------------------------|
| 20 years | \$87,086 | \$33,431 | \$10,691 | \$44,122 | \$131,208 |
| 15 years | \$87,086 | \$33,431 | \$17,890 | \$51,321 | \$138,407 |
| 10 years | \$87,086 | \$33,431 | \$33,120 | \$66,551 | \$153,637 |
| 5 years | \$87,086 | \$33,431 | \$80,569 | \$114,000 | \$201,086 |

¹ The ADP amounts are assumed to be made in the middle of the fiscal year. A payment made earlier or later in the fiscal year would have to be less or more than the amount shown to have the same effect on the UAL amortization.

Note that the calculations above are based on the projected Unfunded Accrued Liability as of June 30, 2021 as determined in the June 30, 2019 actuarial valuation. New unfunded liabilities can emerge in future years due to assumption or method changes, changes in plan provisions and actuarial experience different than assumed. Making an ADP illustrated above for the indicated number of years will not result in a plan that is exactly 100% funded in the indicated number of years. Valuation results will vary from one year to the next and can diverge significantly from projections over a period of several years.

Plan's Funded Status

| | June 30, 2018 | June 30, 2019 |
|---|---------------|---------------|
| 1. Present Value of Projected Benefits (PVB) | \$4,625,348 | \$4,944,192 |
| 2. Entry Age Normal Accrued Liability (AL) | 3,788,239 | 4,107,473 |
| 3. Plan's Market Value of Assets (MVA) | 3,400,837 | 3,657,311 |
| 4. Unfunded Accrued Liability (UAL) [(2) - (3)] | 387,402 | 450,162 |
| 5. Funded Ratio [(3) / (2)] | 89.8% | 89.0% |

This measure of funded status is an assessment of the need for future employer contributions based on the selected actuarial cost method used to fund the plan. The UAL is the present value of future employer contributions for service that has already been earned and is in addition to future normal cost contributions for active members. For a measure of funded status that is appropriate for assessing the sufficiency of plan assets to cover estimated termination liabilities, please see "Hypothetical Termination Liability" in the "Risk Analysis" section.

Projected Employer Contributions

The table below shows the required and projected employer contributions (before cost sharing) for the next six fiscal years. The projection assumes that all actuarial assumptions will be realized and that no further changes to assumptions, contributions, benefits, or funding will occur during the projection period. As of the preparation date of this report, the year to date return for the 2019-20 fiscal year was well below the 7% assumed return. Actual contribution rates during this projection period could be significantly higher than the projection shown below.

| | Required Contribution | Projected Future Employer Contributions (Assumes 7.00% Return for Fiscal Year 2019-20) | | | | |
|---------------|-----------------------|---|----------|----------|----------|----------|
| Fiscal Year | 2021-22 | 2022-23 | 2023-24 | 2024-25 | 2025-26 | 2026-27 |
| Normal Cost % | 12.20% | 12.2% | 12.2% | 12.2% | 12.2% | 12.2% |
| UAL Payment | \$33,431 | \$42,000 | \$46,000 | \$50,000 | \$52,000 | \$53,000 |

For some sources of UAL, the change in UAL is amortized using a 5-year ramp up. For more information, please see "Amortization of the Unfunded Actuarial Accrued Liability" under "Actuarial Methods" in Appendix A. This method phases in the impact of the change in UAL over a 5-year period in order to reduce employer cost volatility from year to year. As a result of this methodology, dramatic changes in the required employer contributions in any one year are less likely. However, required contributions can change gradually and significantly over the next five years. In years when there is a large increase in UAL, the relatively small amortization payments during the ramp up period could result in a funded ratio that is projected to decrease initially while the contribution impact of the increase in the UAL is phased in.

For projected contributions under alternate investment return scenarios, please see the "Future Investment Return Scenarios" in the "Risk Analysis" section.

Cost

Actuarial Determination of Pension Plan Cost

Contributions to fund the pension plan are comprised of two components:

- The Normal Cost, expressed as a percentage of total active payroll
- The Amortization of the Unfunded Accrued Liability (UAL), expressed as a dollar amount

For fiscal years prior to FY 2016-17, the Amortization of UAL component was expressed as a percentage of total active payroll. Starting with FY 2016-17, the Amortization of UAL component was expressed as a dollar amount and invoiced on a monthly basis. There continues to be an option to prepay this amount during July of each fiscal year.

The Normal Cost component will continue to be expressed as a percentage of active payroll with employer and employee contributions payable as part of the regular payroll reporting process.

The determination of both components requires complex actuarial calculations. The calculations are based on a set of actuarial assumptions which can be divided into two categories:

- Demographic assumptions (e.g., mortality rates, retirement rates, employment termination rates, disability rates)
- Economic assumptions (e.g., future investment earnings, inflation, salary growth rates)

These assumptions reflect CalPERS' best estimate of future experience of the plan and are long term in nature. We recognize that all assumptions will not be realized in any given year. For example, the investment earnings at CalPERS have averaged 5.8% over the 20 years ending June 30, 2019, yet individual fiscal year returns have ranged from -23.6% to +20.7%. In addition, CalPERS reviews all actuarial assumptions by conducting in-depth experience studies every four years, with the most recent experience study completed in 2017.

Changes Since the Prior Year's Valuation

Benefits

The standard actuarial practice at CalPERS is to recognize mandated legislative benefit changes in the first annual valuation following the effective date of the legislation. Voluntary benefit changes by plan amendment are generally included in the first valuation that is prepared after the amendment becomes effective, even if the valuation date is prior to the effective date of the amendment.

This valuation generally reflects plan changes by amendments effective before the date of the report. Please refer to the "Plan's Major Benefit Options" and Appendix B for a summary of the plan provisions used in this valuation. The effect of any mandated benefit changes or plan amendments on the unfunded liability is shown in the "(Gain)/Loss Analysis" and the effect on the employer contribution is shown in the "Reconciliation of Required Employer Contributions." It should be noted that no change in liability or contribution is shown for any plan changes which were already included in the prior year's valuation.

Actuarial Methods and Assumptions

The CalPERS Board of Administration adopted a new amortization policy effective with this actuarial valuation. The new policy shortens the period over which actuarial gains and losses are amortized from 30 years to 20 years with the payments computed as a level dollar amount. In addition, the new policy does not utilize a 5-year ramp-up and ramp-down on UAL bases attributable to assumption and method changes and non-investment gains/losses. The new policy also does not utilize a 5-year ramp-down on investment gains/losses. These changes will apply only to new UAL bases established on or after June 30, 2019.

For inactive employers, the new amortization policy imposes a maximum amortization period of 15 years for all unfunded accrued liabilities effective June 30, 2017. Furthermore, the plan actuary has the ability to shorten the amortization period on any valuation date based on the life expectancy of plan members and projected cash flow needs to the plan.

Subsequent Events

The contribution requirements determined in this actuarial valuation report are based on demographic and financial information as of June 30, 2019. Changes in the value of assets subsequent to that date are not reflected. Investment returns below the assumed rate of return will increase future required contributions while investment returns above the assumed rate of return will decrease future required contributions.

The projected employer contributions on Page 6 are calculated under the assumption that the discount rate remains at 7.0% going forward and that the realized rate of return on assets for fiscal year 2019-20 is 7.0%.

This actuarial valuation report reflects statutory changes, regulatory changes and CalPERS Board actions through January 2020. Any subsequent changes or actions are not reflected.

Assets and Liabilities

- **Breakdown of Entry Age Normal Accrued Liability**
- **Allocation of Plan's Share of Pool's Experience/Assumption Change**
- **Development of Plan's Share of Pool's Market Value of Assets**
- **Schedule of Plan's Amortization Bases**
- **Amortization Schedule and Alternatives**
- **Employer Contribution History**
- **Funding History**

Breakdown of Entry Age Normal Accrued Liability

| | |
|--|------------------|
| Active Members | \$1,689,648 |
| Transferred Members | 630,674 |
| Terminated Members | 218,982 |
| Members and Beneficiaries Receiving Payments | <u>1,568,169</u> |
| Total | \$4,107,473 |

Allocation of Plan's Share of Pool's Experience/Assumption Change

It is the policy of CalPERS to ensure equity within the risk pools by allocating the pool's experience gains/losses and assumption changes in a manner that treats each employer equitably and maintains benefit security for the members of the System while minimizing substantial variations in employer contributions. The Pool's experience gains/losses and impact of assumption/method changes is allocated to the plan as follows:

| | |
|---|----------------|
| 1. Plan's Accrued Liability | \$4,107,473 |
| 2. Projected UAL balance at 6/30/2019 | 416,357 |
| 3. Pool's Accrued Liability ¹ | 18,394,114,919 |
| 4. Sum of Pool's Individual Plan UAL Balances at 6/30/2019 ¹ | 4,268,374,183 |
| 5. Pool's 2018/19 Investment (Gain)/Loss ¹ | 68,711,010 |
| 6. Pool's 2018/19 Non-Investment (Gain)/Loss ¹ | 70,985,020 |
| 7. Plan's Share of Pool's Investment (Gain)/Loss: $[(1) - (2)] \div [(3) - (4)] \times (5)$ | 17,954 |
| 8. Plan's Share of Pool's Non-Investment (Gain)/Loss: $(1) \div (3) \times (6)$ | 15,851 |
| 9. Plan's New (Gain)/Loss as of 6/30/2019: $(7) + (8)$ | 33,806 |
| 10. Other Changes in the UAL ² | 0 |

¹ Does not include plans that transferred to Pool on the valuation date.

² May include Golden Handshakes, Service Purchases, etc. See Schedule of Plan's Amortization Bases for details.

Development of the Plan's Share of Pool's Market Value of Assets

| | |
|--|-------------|
| 11. Plan's UAL: $(2) + (9) + (10)$ | \$450,162 |
| 12. Plan's Share of Pool's MVA: $(1) - (11)$ | \$3,657,311 |

Schedule of Plan's Amortization Bases

Note that there is a two-year lag between the valuation date and the start of the contribution fiscal year.

- The assets, liabilities, and funded status of the plan are measured as of the valuation date: June 30, 2019.
- The required employer contributions determined by the valuation are for the fiscal year beginning two years after the valuation date: fiscal year 2021-22.

This two-year lag is necessary due to the amount of time needed to extract and test the membership and financial data, and the need to provide public agencies with their required employer contribution well in advance of the start of the fiscal year.

The Unfunded Accrued Liability (UAL) is used to determine the employer contribution and therefore must be rolled forward two years from the valuation date to the first day of the fiscal year for which the contribution is being determined. The UAL is rolled forward each year by subtracting the expected payment on the UAL for the fiscal year and adjusting for interest. The expected payment on the UAL for a fiscal year is equal to the Expected Employer Contribution for the fiscal year minus the Expected Normal Cost for the year. The Employer Contribution for the first fiscal year is determined by the actuarial valuation two years ago and the contribution for the second year is from the actuarial valuation one year ago. Additional discretionary payments are reflected in the Expected Payments column in the fiscal year they were made by the agency.

| Reason for Base | Date Est. | Ramp Level 2021-22 | Ramp Shape | Escala-tion Rate | Amort. Period | Balance 6/30/19 | Expected Payment 2019-20 | Balance 6/30/20 | Expected Payment 2020-21 | Balance 6/30/21 | Minimum Required Payment 2021-22 |
|----------------------------|-----------|--------------------|------------|------------------|---------------|-----------------|--------------------------|-----------------|--------------------------|-----------------|----------------------------------|
| Non-Investment (Gain)/Loss | 6/30/14 | 100% | Up/Down | 2.75% | 25 | 332 | 18 | 337 | 22 | 338 | 23 |
| Investment (Gain)/Loss | 6/30/14 | 100% | Up/Down | 2.75% | 25 | (291,432) | (15,470) | (295,830) | (19,562) | (296,303) | (20,100) |
| Assumption Change | 6/30/14 | 100% | Up/Down | 2.75% | 15 | 189,072 | 14,062 | 187,761 | 17,854 | 182,436 | 18,345 |
| Non-Investment (Gain)/Loss | 6/30/15 | 100% | Up/Down | 2.75% | 26 | (14,773) | (590) | (15,197) | (795) | (15,438) | (1,021) |
| Investment (Gain)/Loss | 6/30/15 | 100% | Up/Down | 2.75% | 26 | 173,591 | 6,928 | 178,576 | 9,340 | 181,415 | 11,996 |
| Non-Investment (Gain)/Loss | 6/30/16 | 80% | Up/Down | 2.75% | 27 | (25,738) | (695) | (26,821) | (1,054) | (27,608) | (1,444) |
| Investment (Gain)/Loss | 6/30/16 | 80% | Up/Down | 2.75% | 27 | 257,063 | 6,944 | 267,874 | 10,527 | 275,736 | 14,422 |
| Assumption Change | 6/30/16 | 80% | Up/Down | 2.75% | 17 | 65,993 | 2,436 | 68,093 | 3,707 | 69,025 | 5,079 |
| Non-Investment (Gain)/Loss | 6/30/17 | 60% | Up/Down | 2.75% | 28 | (5,294) | (74) | (5,588) | (149) | (5,825) | (229) |
| Investment (Gain)/Loss | 6/30/17 | 60% | Up/Down | 2.75% | 28 | (125,140) | (1,739) | (132,101) | (3,511) | (137,716) | (5,412) |
| Assumption Change | 6/30/17 | 60% | Up/Down | 2.75% | 18 | 74,148 | 1,401 | 77,889 | 2,840 | 80,404 | 4,378 |
| Non-Investment (Gain)/Loss | 6/30/18 | 40% | Up/Down | 2.75% | 29 | 15,417 | 0 | 16,496 | 225 | 17,418 | 463 |
| Investment (Gain)/Loss | 6/30/18 | 40% | Up/Down | 2.75% | 29 | (37,295) | 0 | (39,906) | (545) | (42,136) | (1,120) |
| Assumption Change | 6/30/18 | 40% | Up/Down | 2.75% | 19 | 110,106 | (4,482) | 122,450 | 2,283 | 128,660 | 4,692 |
| Method Change | 6/30/18 | 40% | Up/Down | 2.75% | 19 | 30,307 | (297) | 32,736 | 610 | 34,397 | 1,254 |
| Non-Investment (Gain)/Loss | 6/30/19 | No Ramp | | 0.00% | 20 | 15,851 | 0 | 16,961 | 0 | 18,148 | 1,656 |
| Investment (Gain)/Loss | 6/30/19 | 20% | Up Only | 0.00% | 20 | 17,954 | 0 | 19,211 | 0 | 20,556 | 449 |
| Total | | | | | | 450,162 | 8,442 | 472,941 | 21,792 | 483,507 | 33,431 |

The (gain)/loss bases are the plan's allocated share of the risk pool's (gain)/loss for the fiscal year as disclosed in "Allocation of Plan's Share of Pool's Experience/Assumption Change" earlier in this section. These (gain)/loss bases will be amortized in accordance with the CalPERS amortization policy in effect at the time the base was established.

Amortization Schedule and Alternatives

The amortization schedule on the previous page shows the minimum contributions required according to the CalPERS amortization policy. Many agencies have expressed interest in paying off the unfunded accrued liabilities more quickly than required. As such, we have provided alternative amortization schedules to help analyze the current amortization schedule and illustrate the potential savings of accelerating unfunded liability payments.

Shown on the following page are future year amortization payments based on 1) the current amortization schedule reflecting the individual bases and remaining periods shown on the previous page, and 2) alternative "fresh start" amortization schedules using two sample periods that would both result in interest savings relative to the current amortization schedule.

The Current Amortization Schedule typically contains both positive and negative bases. Positive bases result from plan changes, assumption changes, method changes or plan experience that increase unfunded liability. Negative bases result from plan changes, assumption changes, method changes, or plan experience that decrease unfunded liability. The combination of positive and negative bases within an amortization schedule can result in unusual or problematic circumstances in future years, such as:

- When a negative payment would be required on a positive unfunded actuarial liability; or
- When the payment would completely amortize the total unfunded liability in a very short time period, and results in a large change in the employer contribution requirement.

In any year when one of the above scenarios occurs, the actuary will consider corrective action such as replacing the existing unfunded liability bases with a single "fresh start" base and amortizing it over a reasonable period.

The Current Amortization Schedule on the following page may appear to show that, based on the current amortization bases, one of the above scenarios will occur at some point in the future. It is impossible to know today whether such a scenario will in fact arise since there will be additional bases added to the amortization schedule in each future year. Should such a scenario arise in any future year, the actuary will take appropriate action based on guidelines in the CalPERS amortization policy.

Amortization Schedule and Alternatives

| Date | <u>Current Amortization Schedule</u> | | <u>Alternate Schedules</u> | | | |
|--------------------------|--------------------------------------|----------------|----------------------------|----------------|----------------------|----------------|
| | Balance | Payment | 15 Year Amortization | | 10 Year Amortization | |
| | | | Balance | Payment | Balance | Payment |
| 6/30/2021 | 483,507 | 33,431 | 483,507 | 51,321 | 483,507 | 66,551 |
| 6/30/2022 | 482,769 | 41,664 | 464,266 | 51,321 | 448,512 | 66,551 |
| 6/30/2023 | 473,465 | 45,537 | 443,678 | 51,321 | 411,067 | 66,551 |
| 6/30/2024 | 459,501 | 50,026 | 421,649 | 51,321 | 371,001 | 66,551 |
| 6/30/2025 | 439,918 | 51,755 | 398,078 | 51,321 | 328,130 | 66,550 |
| 6/30/2026 | 417,177 | 53,072 | 372,857 | 51,321 | 282,259 | 66,550 |
| 6/30/2027 | 391,481 | 54,422 | 345,870 | 51,321 | 233,177 | 66,551 |
| 6/30/2028 | 362,590 | 55,814 | 316,994 | 51,320 | 180,659 | 66,551 |
| 6/30/2029 | 330,237 | 57,240 | 286,098 | 51,321 | 124,464 | 66,550 |
| 6/30/2030 | 294,142 | 58,704 | 253,038 | 51,320 | 64,337 | 66,551 |
| 6/30/2031 | 254,008 | 60,214 | 217,665 | 51,321 | | |
| 6/30/2032 | 209,503 | 56,817 | 179,815 | 51,321 | | |
| 6/30/2033 | 165,395 | 53,190 | 139,315 | 51,320 | | |
| 6/30/2034 | 121,951 | 47,522 | 95,981 | 51,320 | | |
| 6/30/2035 | 81,331 | 39,365 | 49,614 | 51,321 | | |
| 6/30/2036 | 46,304 | 26,261 | | | | |
| 6/30/2037 | 22,380 | 18,077 | | | | |
| 6/30/2038 | 5,249 | 5,430 | | | | |
| 6/30/2039 | | | | | | |
| 6/30/2040 | | | | | | |
| 6/30/2041 | | | | | | |
| 6/30/2042 | | | | | | |
| 6/30/2043 | | | | | | |
| 6/30/2044 | | | | | | |
| 6/30/2045 | | | | | | |
| 6/30/2046 | | | | | | |
| 6/30/2047 | | | | | | |
| 6/30/2048 | | | | | | |
| 6/30/2049 | | | | | | |
| 6/30/2050 | | | | | | |
| Total | | 808,541 | | 769,811 | | 665,507 |
| Interest Paid | | 325,034 | | 286,304 | | 182,000 |
| Estimated Savings | | | | 38,730 | | 143,034 |

Employer Contribution History

The table below provides a recent history of the required employer contributions for the plan, as determined by the annual actuarial valuation. It does not account for prepayments or benefit changes made during a fiscal year.

| Fiscal Year | Employer Normal Cost | Unfunded Liability Payment (\$) |
|--------------------|-----------------------------|--|
| 2016 - 17 | 10.069% | \$40,238 |
| 2017 - 18 | 10.110% | 1,335 |
| 2018 - 19 | 10.609% | 7,326 |
| 2019 - 20 | 11.432% | 13,221 |
| 2020 - 21 | 12.361% | 21,794 |
| 2021 - 22 | 12.20% | 33,431 |

Funding History

The funding history below shows the plan's actuarial accrued liability, share of the pool's market value of assets, share of the pool's unfunded liability, funded ratio, and annual covered payroll.

| Valuation Date | Accrued Liability (AL) | Share of Pool's Market Value of Assets (MVA) | Plan's Share of Pool's Unfunded Liability | Funded Ratio | Annual Covered Payroll |
|-----------------------|-------------------------------|---|--|---------------------|-------------------------------|
| 06/30/2011 | \$2,608,776 | \$1,854,073 | \$754,703 | 71.1% | \$400,349 |
| 06/30/2012 | 2,701,872 | 1,944,295 | 757,577 | 72.0% | 315,640 |
| 06/30/2013 | 2,953,003 | 2,249,969 | 703,034 | 76.2% | 488,190 |
| 06/30/2014 | 3,198,982 | 2,548,360 | 650,622 | 79.7% | 526,074 |
| 06/30/2015 | 3,289,011 | 2,498,069 | 790,942 | 76.0% | 553,860 |
| 06/30/2016 | 3,282,538 | 2,992,411 | 290,127 | 91.2% | 544,990 |
| 06/30/2017 | 3,446,330 | 3,189,522 | 256,808 | 92.5% | 580,235 |
| 06/30/2018 | 3,788,239 | 3,400,837 | 387,402 | 89.8% | 618,072 |
| 06/30/2019 | 4,107,473 | 3,657,311 | 450,162 | 89.0% | 658,028 |

Risk Analysis

- **Future Investment Return Scenarios**
- **Discount Rate Sensitivity**
- **Mortality Rate Sensitivity**
- **Maturity Measures**
- **Maturity Measures History**
- **Hypothetical Termination Liability**

Future Investment Return Scenarios

Analysis was performed to determine the effects of various future investment returns on required employer contributions. The projections below provide a range of results based on five investment return scenarios assumed to occur during the next four fiscal years (2019-20, 2020-21, 2021-22 and 2022-23). The projections also assume that all other actuarial assumptions will be realized and that no further changes to assumptions, contributions, benefits, or funding will occur.

For fiscal years 2019-20, 2020-21, 2021-22, and 2022-23, each scenario assumes an alternate fixed annual return. The fixed return assumptions for the five scenarios are 1.0%, 4.0%, 7.0%, 9.0% and 12.0%.

These alternate investment returns were chosen based on stochastic analysis of possible future investment returns over the four-year period ending June 30, 2023. Using the expected returns and volatility of the asset classes in which the funds are invested, we produced five thousand stochastic outcomes for this period based on the most recently completed Asset Liability Management process. We then selected annual returns that approximate the 5th, 25th, 50th, 75th, and 95th percentiles for these outcomes. For example, of all the 4-year outcomes generated in the stochastic analysis, approximately 25% had an average annual return of 4.0% or less.

Required contributions outside of this range are also possible. In particular, whereas it is unlikely that investment returns will average less than 1.0% or greater than 12.0% over this four-year period, the likelihood of a single investment return less than 1.0% or greater than 12.0% in any given year is much greater.

| Assumed Annual Return From 2019-20 through 2022-23 | Projected Employer Contributions | | | |
|---|----------------------------------|----------|----------|-----------|
| | 2022-23 | 2023-24 | 2024-25 | 2025-26 |
| 1.0% | | | | |
| Normal Cost | 12.2% | 12.2% | 12.2% | 12.2% |
| UAL Contribution | \$47,000 | \$62,000 | \$83,000 | \$107,000 |
| 4.0% | | | | |
| Normal Cost | 12.2% | 12.2% | 12.2% | 12.2% |
| UAL Contribution | \$44,000 | \$54,000 | \$67,000 | \$80,000 |
| 7.0% | | | | |
| Normal Cost | 12.2% | 12.2% | 12.2% | 12.2% |
| UAL Contribution | \$42,000 | \$46,000 | \$50,000 | \$52,000 |
| 9.0% | | | | |
| Normal Cost | 12.5% | 12.7% | 13.0% | 13.2% |
| UAL Contribution | \$41,000 | \$42,000 | \$43,000 | \$39,000 |
| 12.0% | | | | |
| Normal Cost | 12.5% | 12.7% | 13.0% | 13.2% |
| UAL Contribution | \$38,000 | \$34,000 | \$0 | \$0 |

These projections reflect the impact of the CalPERS risk mitigation policy, which reduces the discount rate when investment returns exceed specified trigger points.

Discount Rate Sensitivity

The discount rate assumption is calculated as the sum of the assumed real rate of return and the assumed annual price inflation, currently 4.50% and 2.50%, respectively. Changing either the price inflation assumption or the real rate of return assumption will change the discount rate. The sensitivity of the valuation results to the discount rate assumption depends on which component of the discount rate is changed. Shown below are various valuation results as of June 30, 2019 assuming alternate discount rates by changing the two components independently. Results are shown using the current discount rate of 7.0% as well as alternate discount rates of 6.0% and 8.0%. The rates of 6.0% and 8.0% were selected since they illustrate the impact of a 1.0% increase or decrease to the 7.0% assumption.

Sensitivity to the Real Rate of Return Assumption

| As of June 30, 2019 | 1% Lower Real Return Rate | Current Assumptions | 1% Higher Real Return Rate |
|---|---------------------------|---------------------|----------------------------|
| Discount Rate | 6.0% | 7.0% | 8.0% |
| Inflation | 2.5% | 2.5% | 2.5% |
| Real Rate of Return | 3.5% | 4.5% | 5.5% |
| a) Total Normal Cost | 25.21% | 20.16% | 16.30% |
| b) Accrued Liability | \$4,636,976 | \$4,107,473 | \$3,665,296 |
| c) Market Value of Assets | \$3,657,311 | \$3,657,311 | \$3,657,311 |
| d) Unfunded Liability/(Surplus) [(b) - (c)] | \$979,665 | \$450,162 | \$7,985 |
| e) Funded Status | 78.9% | 89.0% | 99.8% |

Sensitivity to the Price Inflation Assumption

| As of June 30, 2019 | 1% Lower Inflation Rate | Current Assumptions | 1% Higher Inflation Rate |
|---|-------------------------|---------------------|--------------------------|
| Discount Rate | 6.0% | 7.0% | 8.0% |
| Inflation | 1.5% | 2.5% | 3.5% |
| Real Rate of Return | 4.5% | 4.5% | 4.5% |
| a) Total Normal Cost | 21.53% | 20.16% | 18.56% |
| b) Accrued Liability | \$4,336,697 | \$4,107,473 | \$3,805,478 |
| c) Market Value of Assets | \$3,657,311 | \$3,657,311 | \$3,657,311 |
| d) Unfunded Liability/(Surplus) [(b) - (c)] | \$679,386 | \$450,162 | \$148,167 |
| e) Funded Status | 84.3% | 89.0% | 96.1% |

Mortality Rate Sensitivity

The following table looks at the change in the June 30, 2019 plan costs and funded ratio under two different longevity scenarios, namely assuming post-retirement rates of mortality are 10% lower or 10% higher than our current mortality assumptions adopted in 2017. This type of analysis highlights the impact on the plan of improving or worsening mortality over the long-term.

| As of June 30, 2019 | 10% Lower Mortality Rates | Current Assumptions | 10% Higher Mortality Rates |
|---|---------------------------|---------------------|----------------------------|
| a) Total Normal Cost | 20.50% | 20.16% | 19.85% |
| b) Accrued Liability | \$4,196,871 | \$4,107,473 | \$4,025,219 |
| c) Market Value of Assets | \$3,657,311 | \$3,657,311 | \$3,657,311 |
| d) Unfunded Liability/(Surplus) [(b) - (c)] | \$539,560 | \$450,162 | \$367,908 |
| e) Funded Status | 87.1% | 89.0% | 90.9% |

Maturity Measures

As pension plans mature they become more sensitive to risks. Understanding plan maturity and how it affects the ability of a pension plan to tolerate risk is important in understanding how the plan is impacted by investment return volatility, other economic variables and changes in longevity or other demographic assumptions. One way to look at the maturity level of CalPERS and its plans is to look at the ratio of a plan's retiree liability to its total liability. A pension plan in its infancy will have a very low ratio of retiree liability to total liability. As the plan matures, the ratio starts increasing. A mature plan will often have a ratio above 60%-65%.

| Ratio of Retiree Accrued Liability to Total Accrued Liability | June 30, 2018 | June 30, 2019 |
|--|----------------------|----------------------|
| 1. Retired Accrued Liability | 1,530,281 | 1,568,169 |
| 2. Total Accrued Liability | 3,788,239 | 4,107,473 |
| 3. Ratio of Retiree AL to Total AL [(1) / (2)] | 0.40 | 0.38 |

Another measure of maturity level of CalPERS and its plans is to look at the ratio of actives to retirees, also called the Support Ratio. A pension plan in its infancy will have a very high ratio of active to retired members. As the plan matures, and members retire, the ratio starts declining. A mature plan will often have a ratio near or below one. The average support ratio for CalPERS public agency plans is 1.25.

| Support Ratio | June 30, 2018 | June 30, 2019 |
|------------------------------|----------------------|----------------------|
| 1. Number of Actives | 5 | 5 |
| 2. Number of Retirees | 7 | 8 |
| 3. Support Ratio [(1) / (2)] | 0.71 | 0.63 |

Maturity Measures (Continued)

The actuarial calculations supplied in this communication are based on various assumptions about long-term demographic and economic behavior. Unless these assumptions (e.g., terminations, deaths, disabilities, retirements, salary growth, and investment return) are exactly realized each year, there will be differences on a year-to-year basis. The year-to-year differences between actual experience and the assumptions are called actuarial gains and losses and serve to lower or raise required employer contributions from one year to the next. Therefore, employer contributions will inevitably fluctuate, especially due to the ups and downs of investment returns.

Asset Volatility Ratio (AVR)

Shown in the table below is the asset volatility ratio (AVR), which is the ratio of market value of assets to payroll. Plans that have higher AVR experience more volatile employer contributions (as a percentage of payroll) due to investment return. For example, a plan with an asset-to-payroll ratio of 8 may experience twice the contribution volatility due to investment return volatility than a plan with an asset-to-payroll ratio of 4. It should be noted that this ratio is a measure of the current situation. It increases over time but generally tends to stabilize as the plan matures.

Liability Volatility Ratio (LVR)

Also shown in the table below is the liability volatility ratio (LVR), which is the ratio of accrued liability to payroll. Plans that have a higher LVR experience more volatile employer contributions (as a percentage of payroll) due to investment return and changes in liability. For example, a plan with LVR ratio of 8 is expected to have twice the contribution volatility of a plan with LVR of 4. It should be noted that this ratio indicates a longer-term potential for contribution volatility. The AVR, described above, will tend to move closer to the LVR as a plan matures.

| Contribution Volatility | June 30, 2018 | June 30, 2019 |
|---|---------------|---------------|
| 1. Market Value of Assets | \$3,400,837 | \$3,657,311 |
| 2. Payroll | 618,072 | 658,028 |
| 3. Asset Volatility Ratio (AVR) [(1) / (2)] | 5.5 | 5.6 |
| 4. Accrued Liability | \$3,788,239 | \$4,107,473 |
| 5. Liability Volatility Ratio (LVR) [(4) / (2)] | 6.1 | 6.2 |

Maturity Measures History

| Valuation Date | Ratio of Retiree Accrued Liability to Total Accrued Liability | Support Ratio | Asset Volatility Ratio | Liability Volatility Ratio |
|----------------|--|------------------|------------------------------|----------------------------------|
| 06/30/2017 | 0.47 | 0.63 | 5.5 | 5.9 |
| 06/30/2018 | 0.40 | 0.71 | 5.5 | 6.1 |
| 06/30/2019 | 0.38 | 0.63 | 5.6 | 6.2 |

Hypothetical Termination Liability

The hypothetical termination liability is an estimate of the financial position of the plan had the contract with CalPERS been terminated as of June 30, 2019. The plan liability on a termination basis is calculated differently compared to the plan's ongoing funding liability. For the hypothetical termination liability calculation, both compensation and service are frozen as of the valuation date and no future pay increases or service accruals are assumed. This measure of funded status is not appropriate for assessing the need for future employer contributions in the case of an ongoing plan, that is, for an employer that continues to provide CalPERS retirement benefits to active employees.

A more conservative investment policy and asset allocation strategy was adopted by the CalPERS Board for the Terminated Agency Pool. The Terminated Agency Pool has limited funding sources since no future employer contributions will be made. Therefore, expected benefit payments are secured by risk-free assets and benefit security for members is increased while limiting the funding risk. However, this asset allocation has a lower expected rate of return than the PERF and consequently, a lower discount rate is assumed. The lower discount rate for the Terminated Agency Pool results in higher liabilities for terminated plans.

The effective termination discount rate will depend on actual market rates of return for risk-free securities on the date of termination. As market discount rates are variable, the table below shows a range for the hypothetical termination liability based on the lowest and highest interest rates observed during an approximate 19-month period from 12 months before the valuation date to 7 months after.

| Market Value of Assets (MVA) | Hypothetical Termination Liability^{1,2} @ 1.75% | Funded Status | Unfunded Termination Liability @ 1.75% | Hypothetical Termination Liability^{1,2} @ 3.25% | Funded Status | Unfunded Termination Liability @ 3.25% |
|-------------------------------------|---|----------------------|---|---|----------------------|---|
| \$3,657,311 | \$8,668,251 | 42.2% | \$5,010,940 | \$7,011,401 | 52.2% | \$3,354,090 |

¹ The hypothetical liabilities calculated above include a 5% mortality contingency load in accordance with Board policy. Other actuarial assumptions can be found in Appendix A of the Section 2 report.

² The current discount rate assumption used for termination valuations is a weighted average of the 10-year and 30-year U.S. Treasury yields where the weights are based on matching asset and liability durations as of the termination date. The discount rates used in the table are based on 20-year Treasury bonds, rounded to the nearest quarter percentage point, which is a good proxy for most plans. The 20-year Treasury yield was 2.31% on June 30, 2019, and was 1.83% on January 31, 2020.

In order to terminate the plan, you must first contact our Retirement Services Contract Unit to initiate a Resolution of Intent to Terminate. The completed Resolution will allow the plan actuary to give you a preliminary termination valuation with a more up-to-date estimate of the plan liabilities. CalPERS advises you to consult with the plan actuary before beginning this process.

Participant Data

The table below shows a summary of your plan's member data upon which this valuation is based:

| | June 30, 2018 | June 30, 2019 |
|---|----------------------|----------------------|
| Reported Payroll | \$618,072 | \$658,028 |
| Projected Payroll for Contribution Purposes | \$670,478 | \$713,822 |
| Number of Members | | |
| Active | 5 | 5 |
| Transferred | 5 | 4 |
| Separated | 8 | 7 |
| Retired | 7 | 8 |

List of Class 1 Benefit Provisions

This plan has the additional Class 1 Benefit Provisions:

- One Year Final Compensation (FAC 1)

Plan's Major Benefit Options

Shown below is a summary of the major optional benefits for which your agency has contracted. A description of principal standard and optional plan provisions is in Section 2.

| | Benefit Group | | | |
|-----------------------------------|---------------|-----------|--------|--|
| Member Category | Misc | Misc | Misc | |
| Demographics | | | | |
| Actives | No | Yes | No | |
| Transfers/Separated | Yes | Yes | No | |
| Receiving | Yes | Yes | Yes | |
| Benefit Provision | | | | |
| Benefit Formula | 2% @ 55 | 2.5% @ 55 | | |
| Social Security Coverage | Yes | Yes | | |
| Full/Modified | Full | Full | | |
| Employee Contribution Rate | | 8.00% | | |
| Final Average Compensation Period | One Year | One Year | | |
| Sick Leave Credit | Yes | Yes | | |
| Non-Industrial Disability | Standard | Standard | | |
| Industrial Disability | No | No | | |
| Pre-Retirement Death Benefits | | | | |
| Optional Settlement 2 | Yes | Yes | | |
| 1959 Survivor Benefit Level | No | No | | |
| Special | No | No | | |
| Alternate (firefighters) | No | No | | |
| Post-Retirement Death Benefits | | | | |
| Lump Sum | \$3000 | \$3000 | \$3000 | |
| Survivor Allowance (PRSA) | No | No | No | |
| COLA | 2% | 2% | 2% | |

Section 2

CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM

Risk Pool Actuarial Valuation Information

**Section 2 may be found on the CalPERS website
(www.calpers.ca.gov) in the Forms and
Publications section**

July 2020

**PEPRA Miscellaneous Plan of the San Bernardino Valley Water Conservation District
(CalPERS ID: 4303312904)
Annual Valuation Report as of June 30, 2019**

Dear Employer,

Attached to this letter, you will find the June 30, 2019 actuarial valuation report of your CalPERS pension plan. **Provided in this report is the determination of the minimum required employer contributions for fiscal year 2021-22.** In addition, the report contains important information regarding the current financial status of the plan as well as projections and risk measures to aid in planning for the future.

Because this plan is in a risk pool, the following valuation report has been separated into two sections:

- Section 1 contains specific information for the plan including the development of the current and projected employer contributions, and
- Section 2 contains the Risk Pool Actuarial Valuation appropriate to the plan as of June 30, 2019.

Section 2 can be found on the CalPERS website (www.calpers.ca.gov). From the home page, go to "*Forms & Publications*" and select "*View All*". In the search box, enter "*Risk Pool*" and from the results list download the Miscellaneous or Safety Risk Pool Actuarial Valuation Report as appropriate.

Your June 30, 2019 actuarial valuation report contains important actuarial information about your pension plan at CalPERS. Your assigned CalPERS staff actuary, whose signature appears in the Actuarial Certification section on page 1, is available to discuss the report with you after August 1, 2020.

Actuarial valuations are based on assumptions regarding future plan experience including investment return and payroll growth, eligibility for the types of benefits provided, and longevity among retirees. The CalPERS Board of Administration adopts these assumptions after considering the advice of CalPERS actuarial and investment teams and other professionals. Each actuarial valuation reflects all prior differences between actual and assumed experience and adjusts the contribution rates as needed. This valuation is based on an investment return assumption of 7.0% which was adopted by the board in December 2016. Other assumptions used in this report are those recommended in the CalPERS Experience Study and Review of Actuarial Assumptions report from December 2017.

Required Contribution

The exhibit below displays the minimum employer contributions, before any cost sharing, for fiscal year 2021-22 along with estimates of the required contributions for fiscal year 2022-23. Member contributions other than cost sharing (whether paid by the employer or the employee) are in addition to the results shown below. **The employer contributions in this report do not reflect any cost sharing arrangements you may have with your employees.**

| Fiscal Year | Employer Normal Cost Rate | Employer Amortization of Unfunded Accrued Liability | PEPRA Employee Rate |
|--------------------------|---------------------------|---|---------------------|
| 2021-22 | 7.59% | \$1,652 | 6.75% |
| <i>Projected Results</i> | | | |
| 2022-23 | 7.6% | \$0 | TBD |

The actual investment return for fiscal year 2019-20 was not known at the time this report was prepared. The projections above assume the investment return for that year would be 7.00%. ***To the extent the actual investment return for fiscal year 2019-20 differs from 7.00%, the actual contribution requirements for fiscal year 2022-23 will differ from those shown above.*** For additional details regarding the assumptions and methods used for these projections please refer to the "Projected Employer Contributions" in the "Highlights and Executive Summary" section. This section also contains projected required contributions through fiscal year 2026-27.

Changes from Previous Year's Valuation

The CalPERS Board of Administration has adopted a new amortization policy effective with the June 30, 2019 actuarial valuation. The new policy shortens the period over which actuarial gains and losses are amortized from 30 years to 20 years with the payments computed as a level dollar amount. In addition, the new policy does not utilize a 5-year ramp-up and ramp-down on Unfunded Accrued Liability (UAL) bases attributable to assumption and method changes and non-investment gains/losses. The new policy does not utilize a 5-year ramp-down on investment gains/losses. These changes apply only to new UAL bases established on or after June 30, 2019.

Further descriptions of general changes are included in the "Highlights and Executive Summary" section and in Appendix A, "Actuarial Methods and Assumptions." The effects of the changes on the required contributions are included in the "Reconciliation of Required Employer Contributions" section.

Questions

We understand that you might have some questions about these results. While we are very interested in discussing these results with your agency, in the interest of allowing us to give every public agency their results, we ask that you wait until after August 1, 2020 to contact us with actuarial questions. If you have other questions, you may call the Customer Contact Center at (888)-CalPERS or **(888-225-7377)**.

Sincerely,

SCOTT TERANDO
Chief Actuary



**Actuarial Valuation
as of June 30, 2019**

**for the
PEPRA Miscellaneous Plan
of the
San Bernardino Valley Water Conservation
District
(CalPERS ID: 4303312904)**

**Required Contributions
for Fiscal Year
July 1, 2021 - June 30, 2022**

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Section 2 – Risk Pool Actuarial Valuation Information

Section 1

CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM

Plan Specific Information for the PEPRA Miscellaneous Plan of the San Bernardino Valley Water Conservation District

**(CalPERS ID: 4303312904)
(Valuation Rate Plan ID: 27072)**

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Actuarial Certification

Section 1 of this report is based on the member and financial data contained in our records as of June 30, 2019 which was provided by your agency and the benefit provisions under your contract with CalPERS. Section 2 of this report is based on the member and financial data as of June 30, 2019 provided by employers participating in the Miscellaneous Risk Pool to which the plan belongs and benefit provisions under the CalPERS contracts for those agencies.

As set forth in Section 2 of this report, the pool actuaries have certified that, in their opinion, the valuation of the risk pool containing your PEPPRA Miscellaneous Plan has been performed in accordance with generally accepted actuarial principles consistent with standards of practice prescribed by the Actuarial Standards Board, and that the assumptions and methods are internally consistent and reasonable for the risk pool as of the date of this valuation and as prescribed by the CalPERS Board of Administration according to provisions set forth in the California Public Employees' Retirement Law.

Having relied upon the information set forth in Section 2 of this report and based on the census and benefit provision information for the plan, it is my opinion as the plan actuary that the Unfunded Accrued Liability amortization bases as of June 30, 2019 and employer contribution as of July 1, 2021 have been properly and accurately determined in accordance with the principles and standards stated above.

The undersigned is an actuary for CalPERS, a member of both the American Academy of Actuaries and Society of Actuaries and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

DANIEL MILLER, ASA, MAAA
Associate Pension Actuary, CalPERS

Highlights and Executive Summary

- **Introduction**
- **Purpose of Section 1**
- **Required Employer Contributions**
- **Additional Discretionary Employer Contributions**
- **Plan's Funded Status**
- **Projected Employer Contributions**
- **Cost**
- **Changes Since the Prior Year's Valuation**
- **Subsequent Events**

Introduction

This report presents the results of the June 30, 2019 actuarial valuation of the PEPRA Miscellaneous Plan of the San Bernardino Valley Water Conservation District of the California Public Employees' Retirement System (CalPERS). This actuarial valuation sets the required employer contributions for fiscal year 2021-22.

Purpose of Section 1

This Section 1 report for the PEPRA Miscellaneous Plan of the San Bernardino Valley Water Conservation District of CalPERS was prepared by the plan actuary in order to:

- Set forth the assets and accrued liabilities of this plan as of June 30, 2019;
- Determine the minimum required employer contribution for this plan for the fiscal year July 1, 2021 through June 30, 2022; and
- Provide actuarial information as of June 30, 2019 to the CalPERS Board of Administration and other interested parties.

The pension funding information presented in this report should not be used in financial reports subject to GASB Statement No. 68 for a Cost Sharing Employer Defined Benefit Pension Plan. A separate accounting valuation report for such purposes is available from CalPERS and details for ordering are available on our website.

The measurements shown in this actuarial valuation may not be applicable for other purposes. The employer should contact their actuary before disseminating any portion of this report for any reason that is not explicitly described above.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; changes in actuarial policies; and changes in plan provisions or applicable law.

Assessment and Disclosure of Risk

This report includes the following risk disclosures consistent with the recommendations of Actuarial Standards of Practice No. 51 and recommended by the California Actuarial Advisory Panel (CAAP) in the Model Disclosure Elements document:

- A "Scenario Test," projecting future results under different investment income returns.
- A "Sensitivity Analysis," showing the impact on current valuation results using alternative discount rates of 6.0% and 8.0%.
- A "Sensitivity Analysis," showing the impact on current valuation results assuming rates of mortality are 10% lower or 10% higher than our current mortality assumptions adopted in 2017.
- Plan maturity measures indicating how sensitive a plan may be to the risks noted above.

Required Employer Contributions

| | Fiscal Year |
|---|----------------|
| Required Employer Contributions | 2021-22 |
| Employer Normal Cost Rate | 7.59% |
| <i>Plus, Either</i> | |
| 1) Monthly Employer Dollar UAL Payment | \$137.67 |
| <i>Or</i> | |
| 2) Annual UAL Prepayment Option* | \$1,597 |
| The total minimum required employer contribution is the sum of the Plan's Employer Normal Cost Rate (expressed as a percentage of payroll) plus the Employer Unfunded Accrued Liability (UAL) Contribution Amount (billed monthly in dollars). | |
| * Only the UAL portion of the employer contribution can be prepaid (which must be received in full no later than July 31). Any prepayment totaling over \$5 million requires a 72-hour notice email to FCSD_public_agency_wires@calpers.ca.gov . Plan Normal Cost contributions will be made as part of the payroll reporting process. If there is contractual cost sharing or other change, this amount will change. | |
| In accordance with Sections 20537 and 20572 of the Public Employees' Retirement Law, if a contracting agency fails to remit the required contributions when due, interest and penalties may apply. | |

| | Fiscal Year 2020-21 | Fiscal Year 2021-22 |
|--|------------------------|------------------------|
| Development of Normal Cost as a Percentage of Payroll¹ | | |
| Base Total Normal Cost for Formula | 14.482% | 14.34% |
| Surcharge for Class 1 Benefits ² | | |
| None | 0.000% | 0.00% |
| Phase out of Normal Cost Difference ³ | 0.000% | 0.00% |
| Plan's Total Normal Cost | 14.482% | 14.34% |
| Plan's Employee Contribution Rate ⁴ | 6.750% | 6.75% |
| Employer Normal Cost Rate | 7.732% | 7.59% |
| Projected Payroll for the Contribution Fiscal Year | \$92,817 | \$109,515 |
| Estimated Employer Contributions Based on Projected Payroll | | |
| Plan's Estimated Employer Normal Cost | \$7,177 | \$8,312 |
| Plan's Payment on Amortization Bases ⁵ | 1,184 | 1,652 |
| % of Projected Payroll (illustrative only) | 1.276% | 1.51% |
| Estimated Total Employer Contribution | \$8,361 | \$9,964 |
| % of Projected Payroll (illustrative only) | 9.008% | 9.10% |

¹ The results shown for fiscal year 2020-21 reflect the prior year valuation and may not take into account any lump sum payment, side fund payoff, or rate adjustment made after April 30, 2019.

² Section 2 of this report contains a list of Class 1 benefits and corresponding surcharges for each benefit.

³ The normal cost difference is phased out over a five-year period. The phase out of normal cost difference is 100% for the first year of pooling and is incrementally reduced by 20% of the original normal cost difference for each subsequent year. This is non-zero only for plans that joined a pool within the past 5 years. Most plans joined a pool June 30, 2003, when risk pooling was implemented.

⁴ For detail regarding the determination of the required PEPRA employee contribution rate see Section on PEPRA Member Contribution Rates.

⁵ See Schedule of Plan's Amortization Bases.

Additional Discretionary Employer Contributions

The minimum required employer contribution towards the Unfunded Accrued Liability (UAL) for this rate plan for the 2021-22 fiscal year is \$1,652. CalPERS allows employers to make additional discretionary payments (ADPs) at any time and in any amount. These optional payments serve to reduce the UAL and future required contributions and can result in significant long-term savings. Employers can also use ADPs to stabilize annual contributions as a fixed dollar amount, percent of payroll or percent of revenue.

Provided below are select ADP options for consideration. Making such an ADP during fiscal year 2021-22 does not require an ADP be made in any future year, nor does it change the remaining amortization period of any portion of unfunded liability. For information on permanent changes to amortization periods, see the "Amortization Schedule and Alternatives" section of the report.

If you are considering making an ADP, please contact your actuary for additional information.

Minimum Required Employer Contribution for Fiscal Year 2021-22

| Estimated Normal Cost | Minimum UAL Payment | ADP | Total UAL Contribution | Estimated Total Contribution |
|-----------------------|---------------------|-----|------------------------|------------------------------|
| \$8,312 | \$1,652 | \$0 | \$1,652 | \$9,964 |

Alternative Fiscal Year 2021-22 Employer Contributions for Greater UAL Reduction

| Funding Target | Estimated Normal Cost | Minimum UAL Payment | ADP ¹ | Total UAL Contribution | Estimated Total Contribution |
|----------------|-----------------------|---------------------|------------------|------------------------|------------------------------|
| 5 years | N/A | N/A | N/A | N/A | N/A |

¹ The ADP amounts are assumed to be made in the middle of the fiscal year. A payment made earlier or later in the fiscal year would have to be less or more than the amount shown to have the same effect on the UAL amortization.

Note that the calculations above are based on the projected Unfunded Accrued Liability as of June 30, 2021 as determined in the June 30, 2019 actuarial valuation. New unfunded liabilities can emerge in future years due to assumption or method changes, changes in plan provisions and actuarial experience different than assumed. Making an ADP illustrated above for the indicated number of years will not result in a plan that is exactly 100% funded in the indicated number of years. Valuation results will vary from one year to the next and can diverge significantly from projections over a period of several years.

Plan's Funded Status

| | June 30, 2018 | June 30, 2019 |
|---|---------------|---------------|
| 1. Present Value of Projected Benefits (PVB) | \$157,981 | \$193,184 |
| 2. Entry Age Normal Accrued Liability (AL) | 26,771 | 43,429 |
| 3. Plan's Market Value of Assets (MVA) | 24,785 | 40,504 |
| 4. Unfunded Accrued Liability (UAL) [(2) - (3)] | 1,986 | 2,925 |
| 5. Funded Ratio [(3) / (2)] | 92.6% | 93.3% |

This measure of funded status is an assessment of the need for future employer contributions based on the selected actuarial cost method used to fund the plan. The UAL is the present value of future employer contributions for service that has already been earned and is in addition to future normal cost contributions for active members. For a measure of funded status that is appropriate for assessing the sufficiency of plan assets to cover estimated termination liabilities, please see "Hypothetical Termination Liability" in the "Risk Analysis" section.

Projected Employer Contributions

The table below shows the required and projected employer contributions (before cost sharing) for the next six fiscal years. The projection assumes that all actuarial assumptions will be realized and that no further changes to assumptions, contributions, benefits, or funding will occur during the projection period. As of the preparation date of this report, the year to date return for the 2019-20 fiscal year was well below the 7% assumed return. Actual contribution rates during this projection period could be significantly higher than the projection shown below.

| | Required Contribution | Projected Future Employer Contributions (Assumes 7.00% Return for Fiscal Year 2019-20) | | | | |
|---------------|-----------------------|---|---------|---------|---------|---------|
| Fiscal Year | 2021-22 | 2022-23 | 2023-24 | 2024-25 | 2025-26 | 2026-27 |
| Normal Cost % | 7.59% | 7.6% | 7.6% | 7.6% | 7.6% | 7.6% |
| UAL Payment | \$1,652 | \$0 | \$0 | \$0 | \$0 | \$0 |

For some sources of UAL, the change in UAL is amortized using a 5-year ramp up. For more information, please see "Amortization of the Unfunded Actuarial Accrued Liability" under "Actuarial Methods" in Appendix A. This method phases in the impact of the change in UAL over a 5-year period in order to reduce employer cost volatility from year to year. As a result of this methodology, dramatic changes in the required employer contributions in any one year are less likely. However, required contributions can change gradually and significantly over the next five years. In years when there is a large increase in UAL, the relatively small amortization payments during the ramp up period could result in a funded ratio that is projected to decrease initially while the contribution impact of the increase in the UAL is phased in.

For projected contributions under alternate investment return scenarios, please see the "Future Investment Return Scenarios" in the "Risk Analysis" section.

Cost

Actuarial Determination of Pension Plan Cost

Contributions to fund the pension plan are comprised of two components:

- The Normal Cost, expressed as a percentage of total active payroll
- The Amortization of the Unfunded Accrued Liability (UAL), expressed as a dollar amount

For fiscal years prior to FY 2016-17, the Amortization of UAL component was expressed as a percentage of total active payroll. Starting with FY 2016-17, the Amortization of UAL component was expressed as a dollar amount and invoiced on a monthly basis. There continues to be an option to prepay this amount during July of each fiscal year.

The Normal Cost component will continue to be expressed as a percentage of active payroll with employer and employee contributions payable as part of the regular payroll reporting process.

The determination of both components requires complex actuarial calculations. The calculations are based on a set of actuarial assumptions which can be divided into two categories:

- Demographic assumptions (e.g., mortality rates, retirement rates, employment termination rates, disability rates)
- Economic assumptions (e.g., future investment earnings, inflation, salary growth rates)

These assumptions reflect CalPERS' best estimate of future experience of the plan and are long term in nature. We recognize that all assumptions will not be realized in any given year. For example, the investment earnings at CalPERS have averaged 5.8% over the 20 years ending June 30, 2019, yet individual fiscal year returns have ranged from -23.6% to +20.7%. In addition, CalPERS reviews all actuarial assumptions by conducting in-depth experience studies every four years, with the most recent experience study completed in 2017.

Changes Since the Prior Year's Valuation

Benefits

The standard actuarial practice at CalPERS is to recognize mandated legislative benefit changes in the first annual valuation following the effective date of the legislation. Voluntary benefit changes by plan amendment are generally included in the first valuation that is prepared after the amendment becomes effective, even if the valuation date is prior to the effective date of the amendment.

This valuation generally reflects plan changes by amendments effective before the date of the report. Please refer to the "Plan's Major Benefit Options" and Appendix B for a summary of the plan provisions used in this valuation. The effect of any mandated benefit changes or plan amendments on the unfunded liability is shown in the "(Gain)/Loss Analysis" and the effect on the employer contribution is shown in the "Reconciliation of Required Employer Contributions." It should be noted that no change in liability or contribution is shown for any plan changes which were already included in the prior year's valuation.

Actuarial Methods and Assumptions

The CalPERS Board of Administration adopted a new amortization policy effective with this actuarial valuation. The new policy shortens the period over which actuarial gains and losses are amortized from 30 years to 20 years with the payments computed as a level dollar amount. In addition, the new policy does not utilize a 5-year ramp-up and ramp-down on UAL bases attributable to assumption and method changes and non-investment gains/losses. The new policy also does not utilize a 5-year ramp-down on investment gains/losses. These changes will apply only to new UAL bases established on or after June 30, 2019.

For inactive employers, the new amortization policy imposes a maximum amortization period of 15 years for all unfunded accrued liabilities effective June 30, 2017. Furthermore, the plan actuary has the ability to shorten the amortization period on any valuation date based on the life expectancy of plan members and projected cash flow needs to the plan.

Subsequent Events

The contribution requirements determined in this actuarial valuation report are based on demographic and financial information as of June 30, 2019. Changes in the value of assets subsequent to that date are not reflected. Investment returns below the assumed rate of return will increase future required contributions while investment returns above the assumed rate of return will decrease future required contributions.

The projected employer contributions on Page 6 are calculated under the assumption that the discount rate remains at 7.0% going forward and that the realized rate of return on assets for fiscal year 2019-20 is 7.0%.

This actuarial valuation report reflects statutory changes, regulatory changes and CalPERS Board actions through January 2020. Any subsequent changes or actions are not reflected.

Assets and Liabilities

- **Breakdown of Entry Age Normal Accrued Liability**
- **Allocation of Plan's Share of Pool's Experience/Assumption Change**
- **Development of Plan's Share of Pool's Market Value of Assets**
- **Schedule of Plan's Amortization Bases**
- **Amortization Schedule and Alternatives**
- **Employer Contribution History**
- **Funding History**

Breakdown of Entry Age Normal Accrued Liability

| | |
|--|----------|
| Active Members | \$43,429 |
| Transferred Members | 0 |
| Terminated Members | 0 |
| Members and Beneficiaries Receiving Payments | 0 |
| Total | \$43,429 |

Allocation of Plan's Share of Pool's Experience/Assumption Change

It is the policy of CalPERS to ensure equity within the risk pools by allocating the pool's experience gains/losses and assumption changes in a manner that treats each employer equitably and maintains benefit security for the members of the System while minimizing substantial variations in employer contributions. The Pool's experience gains/losses and impact of assumption/method changes is allocated to the plan as follows:

| | |
|---|----------------|
| 1. Plan's Accrued Liability | \$43,429 |
| 2. Projected UAL balance at 6/30/2019 | 2,558 |
| 3. Pool's Accrued Liability ¹ | 18,394,114,919 |
| 4. Sum of Pool's Individual Plan UAL Balances at 6/30/2019 ¹ | 4,268,374,183 |
| 5. Pool's 2018/19 Investment (Gain)/Loss ¹ | 68,711,010 |
| 6. Pool's 2018/19 Non-Investment (Gain)/Loss ¹ | 70,985,020 |
| 7. Plan's Share of Pool's Investment (Gain)/Loss: $[(1) - (2)] \div [(3) - (4)] \times (5)$ | 199 |
| 8. Plan's Share of Pool's Non-Investment (Gain)/Loss: $(1) \div (3) \times (6)$ | 168 |
| 9. Plan's New (Gain)/Loss as of 6/30/2019: $(7) + (8)$ | 366 |
| 10. Other Changes in the UAL ² | 0 |

¹ Does not include plans that transferred to Pool on the valuation date.

² May include Golden Handshakes, Service Purchases, etc. See Schedule of Plan's Amortization Bases for details.

Development of the Plan's Share of Pool's Market Value of Assets

| | |
|--|----------|
| 11. Plan's UAL: $(2) + (9) + (10)$ | \$2,925 |
| 12. Plan's Share of Pool's MVA: $(1) - (11)$ | \$40,504 |

Schedule of Plan's Amortization Bases

Note that there is a two-year lag between the valuation date and the start of the contribution fiscal year.

- The assets, liabilities, and funded status of the plan are measured as of the valuation date: June 30, 2019.
- The required employer contributions determined by the valuation are for the fiscal year beginning two years after the valuation date: fiscal year 2021-22.

This two-year lag is necessary due to the amount of time needed to extract and test the membership and financial data, and the need to provide public agencies with their required employer contribution well in advance of the start of the fiscal year.

The Unfunded Accrued Liability (UAL) is used to determine the employer contribution and therefore must be rolled forward two years from the valuation date to the first day of the fiscal year for which the contribution is being determined. The UAL is rolled forward each year by subtracting the expected payment on the UAL for the fiscal year and adjusting for interest. The expected payment on the UAL for a fiscal year is equal to the Expected Employer Contribution for the fiscal year minus the Expected Normal Cost for the year. The Employer Contribution for the first fiscal year is determined by the actuarial valuation two years ago and the contribution for the second year is from the actuarial valuation one year ago. Additional discretionary payments are reflected in the Expected Payments column in the fiscal year they were made by the agency.

| Reason for Base | Date Est. | Ramp Level 2021-22 | Ramp Shape | Escalation Rate | Amort. Period | Balance 6/30/19 | Expected Payment 2019-20 | Balance 6/30/20 | Expected Payment 2020-21 | Balance 6/30/21 | Minimum Required Payment 2021-22 |
|-----------------|-----------|--------------------|------------|-----------------|---------------|-----------------|--------------------------|-----------------|--------------------------|-----------------|----------------------------------|
| Fresh Start | 6/30/19 | No Ramp | | 0.00% | 1 | 2,925 | 477 | 2,636 | 1,184 | 1,597 | 1,652 |
| Total | | | | | | 2,925 | 477 | 2,636 | 1,184 | 1,597 | 1,652 |

The (gain)/loss bases are the plan's allocated share of the risk pool's (gain)/loss for the fiscal year as disclosed in "Allocation of Plan's Share of Pool's Experience/Assumption Change" earlier in this section. These (gain)/loss bases will be amortized in accordance with the CalPERS amortization policy in effect at the time the base was established.

Amortization Schedule and Alternatives

The amortization schedule on the previous page shows the minimum contributions required according to the CalPERS amortization policy. Many agencies have expressed interest in paying off the unfunded accrued liabilities more quickly than required. As such, we have provided alternative amortization schedules to help analyze the current amortization schedule and illustrate the potential savings of accelerating unfunded liability payments.

Shown on the following page are future year amortization payments based on 1) the current amortization schedule reflecting the individual bases and remaining periods shown on the previous page, and 2) alternative "fresh start" amortization schedules using two sample periods that would both result in interest savings relative to the current amortization schedule.

The Current Amortization Schedule typically contains both positive and negative bases. Positive bases result from plan changes, assumption changes, method changes or plan experience that increase unfunded liability. Negative bases result from plan changes, assumption changes, method changes, or plan experience that decrease unfunded liability. The combination of positive and negative bases within an amortization schedule can result in unusual or problematic circumstances in future years, such as:

- When a negative payment would be required on a positive unfunded actuarial liability; or
- When the payment would completely amortize the total unfunded liability in a very short time period, and results in a large change in the employer contribution requirement.

In any year when one of the above scenarios occurs, the actuary will consider corrective action such as replacing the existing unfunded liability bases with a single "fresh start" base and amortizing it over a reasonable period.

The Current Amortization Schedule on the following page may appear to show that, based on the current amortization bases, one of the above scenarios will occur at some point in the future. It is impossible to know today whether such a scenario will in fact arise since there will be additional bases added to the amortization schedule in each future year. Should such a scenario arise in any future year, the actuary will take appropriate action based on guidelines in the CalPERS amortization policy.

Amortization Schedule and Alternatives

| Date | <u>Current Amortization Schedule</u> | | <u>Alternate Schedules</u> | | | |
|-------------------|--------------------------------------|---------|----------------------------|---------|---------------------|---------|
| | Balance | Payment | 0 Year Amortization | | 0 Year Amortization | |
| | | | Balance | Payment | Balance | Payment |
| 6/30/2021 | 1,596 | 1,651 | N/A | N/A | N/A | N/A |
| 6/30/2022 | | | | | | |
| 6/30/2023 | | | | | | |
| 6/30/2024 | | | | | | |
| 6/30/2025 | | | | | | |
| 6/30/2026 | | | | | | |
| 6/30/2027 | | | | | | |
| 6/30/2028 | | | | | | |
| 6/30/2029 | | | | | | |
| 6/30/2030 | | | | | | |
| 6/30/2031 | | | | | | |
| 6/30/2032 | | | | | | |
| 6/30/2033 | | | | | | |
| 6/30/2034 | | | | | | |
| 6/30/2035 | | | | | | |
| 6/30/2036 | | | | | | |
| 6/30/2037 | | | | | | |
| 6/30/2038 | | | | | | |
| 6/30/2039 | | | | | | |
| 6/30/2040 | | | | | | |
| 6/30/2041 | | | | | | |
| 6/30/2042 | | | | | | |
| 6/30/2043 | | | | | | |
| 6/30/2044 | | | | | | |
| 6/30/2045 | | | | | | |
| 6/30/2046 | | | | | | |
| 6/30/2047 | | | | | | |
| 6/30/2048 | | | | | | |
| 6/30/2049 | | | | | | |
| 6/30/2050 | | | | | | |
| Total | | 1,651 | | N/A | | N/A |
| Interest Paid | | 55 | | N/A | | N/A |
| Estimated Savings | | | | N/A | | N/A |

Employer Contribution History

The table below provides a recent history of the required employer contributions for the plan, as determined by the annual actuarial valuation. It does not account for prepayments or benefit changes made during a fiscal year.

| Fiscal Year | Employer Normal Cost | Unfunded Liability Payment (\$) |
|--------------------|-----------------------------|--|
| 2018 - 19 | 6.842% | \$858 |
| 2019 - 20 | 6.985% | 1,138 |
| 2020 - 21 | 7.732% | 1,184 |
| 2021 - 22 | 7.59% | 1,652 |

Funding History

The funding history below shows the plan's actuarial accrued liability, share of the pool's market value of assets, share of the pool's unfunded liability, funded ratio, and annual covered payroll.

| Valuation Date | Accrued Liability (AL) | Share of Pool's Market Value of Assets (MVA) | Plan's Share of Pool's Unfunded Liability | Funded Ratio | Annual Covered Payroll |
|-----------------------|-------------------------------|---|--|---------------------|-------------------------------|
| 06/30/2016 | \$594 | \$550 | \$44 | 92.6% | \$79,976 |
| 06/30/2017 | 11,238 | 11,029 | 209 | 98.1% | 82,583 |
| 06/30/2018 | 26,771 | 24,785 | 1,986 | 92.6% | 85,562 |
| 06/30/2019 | 43,429 | 40,504 | 2,925 | 93.3% | 100,955 |

Risk Analysis

- **Future Investment Return Scenarios**
- **Discount Rate Sensitivity**
- **Mortality Rate Sensitivity**
- **Maturity Measures**
- **Maturity Measures History**
- **Hypothetical Termination Liability**

Future Investment Return Scenarios

Analysis was performed to determine the effects of various future investment returns on required employer contributions. The projections below provide a range of results based on five investment return scenarios assumed to occur during the next four fiscal years (2019-20, 2020-21, 2021-22 and 2022-23). The projections also assume that all other actuarial assumptions will be realized and that no further changes to assumptions, contributions, benefits, or funding will occur.

For fiscal years 2019-20, 2020-21, 2021-22, and 2022-23, each scenario assumes an alternate fixed annual return. The fixed return assumptions for the five scenarios are 1.0%, 4.0%, 7.0%, 9.0% and 12.0%.

These alternate investment returns were chosen based on stochastic analysis of possible future investment returns over the four-year period ending June 30, 2023. Using the expected returns and volatility of the asset classes in which the funds are invested, we produced five thousand stochastic outcomes for this period based on the most recently completed Asset Liability Management process. We then selected annual returns that approximate the 5th, 25th, 50th, 75th, and 95th percentiles for these outcomes. For example, of all the 4-year outcomes generated in the stochastic analysis, approximately 25% had an average annual return of 4.0% or less.

Required contributions outside of this range are also possible. In particular, whereas it is unlikely that investment returns will average less than 1.0% or greater than 12.0% over this four-year period, the likelihood of a single investment return less than 1.0% or greater than 12.0% in any given year is much greater.

| Assumed Annual Return From 2019-20 through 2022-23 | Projected Employer Contributions | | | |
|---|----------------------------------|---------|---------|---------|
| | 2022-23 | 2023-24 | 2024-25 | 2025-26 |
| 1.0% | | | | |
| Normal Cost | 7.6% | 7.6% | 7.6% | 7.6% |
| UAL Contribution | \$61 | \$180 | \$370 | \$610 |
| 4.0% | | | | |
| Normal Cost | 7.6% | 7.6% | 7.6% | 7.6% |
| UAL Contribution | \$30 | \$93 | \$190 | \$320 |
| 7.0% | | | | |
| Normal Cost | 7.6% | 7.6% | 7.6% | 7.6% |
| UAL Contribution | \$0 | \$0 | \$0 | \$0 |
| 9.0% | | | | |
| Normal Cost | 7.8% | 7.9% | 7.4% | 7.5% |
| UAL Contribution | \$0 | \$0 | \$0 | \$0 |
| 12.0% | | | | |
| Normal Cost | 7.8% | 7.9% | 7.4% | 7.5% |
| UAL Contribution | \$0 | \$0 | \$0 | \$0 |

These projections reflect the impact of the CalPERS risk mitigation policy, which reduces the discount rate when investment returns exceed specified trigger points.

Discount Rate Sensitivity

The discount rate assumption is calculated as the sum of the assumed real rate of return and the assumed annual price inflation, currently 4.50% and 2.50%, respectively. Changing either the price inflation assumption or the real rate of return assumption will change the discount rate. The sensitivity of the valuation results to the discount rate assumption depends on which component of the discount rate is changed. Shown below are various valuation results as of June 30, 2019 assuming alternate discount rates by changing the two components independently. Results are shown using the current discount rate of 7.0% as well as alternate discount rates of 6.0% and 8.0%. The rates of 6.0% and 8.0% were selected since they illustrate the impact of a 1.0% increase or decrease to the 7.0% assumption.

Sensitivity to the Real Rate of Return Assumption

| As of June 30, 2019 | 1% Lower Real Return Rate | Current Assumptions | 1% Higher Real Return Rate |
|---|---------------------------|---------------------|----------------------------|
| Discount Rate | 6.0% | 7.0% | 8.0% |
| Inflation | 2.5% | 2.5% | 2.5% |
| Real Rate of Return | 3.5% | 4.5% | 5.5% |
| a) Total Normal Cost | 17.78% | 14.34% | 11.71% |
| b) Accrued Liability | \$56,857 | \$43,429 | \$33,347 |
| c) Market Value of Assets | \$40,504 | \$40,504 | \$40,504 |
| d) Unfunded Liability/(Surplus) [(b) - (c)] | \$16,353 | \$2,925 | (\$7,157) |
| e) Funded Status | 71.2% | 93.3% | 121.5% |

Sensitivity to the Price Inflation Assumption

| As of June 30, 2019 | 1% Lower Inflation Rate | Current Assumptions | 1% Higher Inflation Rate |
|---|-------------------------|---------------------|--------------------------|
| Discount Rate | 6.0% | 7.0% | 8.0% |
| Inflation | 1.5% | 2.5% | 3.5% |
| Real Rate of Return | 4.5% | 4.5% | 4.5% |
| a) Total Normal Cost | 15.33% | 14.34% | 13.16% |
| b) Accrued Liability | \$46,817 | \$43,429 | \$39,481 |
| c) Market Value of Assets | \$40,504 | \$40,504 | \$40,504 |
| d) Unfunded Liability/(Surplus) [(b) - (c)] | \$6,313 | \$2,925 | (\$1,023) |
| e) Funded Status | 86.5% | 93.3% | 102.6% |

Mortality Rate Sensitivity

The following table looks at the change in the June 30, 2019 plan costs and funded ratio under two different longevity scenarios, namely assuming post-retirement rates of mortality are 10% lower or 10% higher than our current mortality assumptions adopted in 2017. This type of analysis highlights the impact on the plan of improving or worsening mortality over the long-term.

| As of June 30, 2019 | 10% Lower Mortality Rates | Current Assumptions | 10% Higher Mortality Rates |
|---|---------------------------|---------------------|----------------------------|
| a) Total Normal Cost | 14.61% | 14.34% | 14.09% |
| b) Accrued Liability | \$44,294 | \$43,429 | \$42,638 |
| c) Market Value of Assets | \$40,504 | \$40,504 | \$40,504 |
| d) Unfunded Liability/(Surplus) [(b) - (c)] | \$3,790 | \$2,925 | \$2,134 |
| e) Funded Status | 91.4% | 93.3% | 95.0% |

Maturity Measures

As pension plans mature they become more sensitive to risks. Understanding plan maturity and how it affects the ability of a pension plan to tolerate risk is important in understanding how the plan is impacted by investment return volatility, other economic variables and changes in longevity or other demographic assumptions. One way to look at the maturity level of CalPERS and its plans is to look at the ratio of a plan's retiree liability to its total liability. A pension plan in its infancy will have a very low ratio of retiree liability to total liability. As the plan matures, the ratio starts increasing. A mature plan will often have a ratio above 60%-65%.

| Ratio of Retiree Accrued Liability to Total Accrued Liability | June 30, 2018 | June 30, 2019 |
|--|----------------------|----------------------|
| 1. Retired Accrued Liability | 0 | 0 |
| 2. Total Accrued Liability | 26,771 | 43,429 |
| 3. Ratio of Retiree AL to Total AL [(1) / (2)] | 0.00 | 0.00 |

Another measure of maturity level of CalPERS and its plans is to look at the ratio of actives to retirees, also called the Support Ratio. A pension plan in its infancy will have a very high ratio of active to retired members. As the plan matures, and members retire, the ratio starts declining. A mature plan will often have a ratio near or below one. The average support ratio for CalPERS public agency plans is 1.25.

| Support Ratio | June 30, 2018 | June 30, 2019 |
|------------------------------|----------------------|----------------------|
| 1. Number of Actives | 2 | 2 |
| 2. Number of Retirees | 0 | 0 |
| 3. Support Ratio [(1) / (2)] | N/A | N/A |

Maturity Measures (Continued)

The actuarial calculations supplied in this communication are based on various assumptions about long-term demographic and economic behavior. Unless these assumptions (e.g., terminations, deaths, disabilities, retirements, salary growth, and investment return) are exactly realized each year, there will be differences on a year-to-year basis. The year-to-year differences between actual experience and the assumptions are called actuarial gains and losses and serve to lower or raise required employer contributions from one year to the next. Therefore, employer contributions will inevitably fluctuate, especially due to the ups and downs of investment returns.

Asset Volatility Ratio (AVR)

Shown in the table below is the asset volatility ratio (AVR), which is the ratio of market value of assets to payroll. Plans that have higher AVR experience more volatile employer contributions (as a percentage of payroll) due to investment return. For example, a plan with an asset-to-payroll ratio of 8 may experience twice the contribution volatility due to investment return volatility than a plan with an asset-to-payroll ratio of 4. It should be noted that this ratio is a measure of the current situation. It increases over time but generally tends to stabilize as the plan matures.

Liability Volatility Ratio (LVR)

Also shown in the table below is the liability volatility ratio (LVR), which is the ratio of accrued liability to payroll. Plans that have a higher LVR experience more volatile employer contributions (as a percentage of payroll) due to investment return and changes in liability. For example, a plan with LVR ratio of 8 is expected to have twice the contribution volatility of a plan with LVR of 4. It should be noted that this ratio indicates a longer-term potential for contribution volatility. The AVR, described above, will tend to move closer to the LVR as a plan matures.

| Contribution Volatility | June 30, 2018 | June 30, 2019 |
|---|---------------|---------------|
| 1. Market Value of Assets | \$24,785 | \$40,504 |
| 2. Payroll | 85,562 | 100,955 |
| 3. Asset Volatility Ratio (AVR) [(1) / (2)] | 0.3 | 0.4 |
| 4. Accrued Liability | \$26,771 | \$43,429 |
| 5. Liability Volatility Ratio (LVR) [(4) / (2)] | 0.3 | 0.4 |

Maturity Measures History

| Valuation Date | Ratio of Retiree Accrued Liability to Total Accrued Liability | Support Ratio | Asset Volatility Ratio | Liability Volatility Ratio |
|----------------|--|------------------|------------------------------|----------------------------------|
| 06/30/2017 | 0.00 | N/A | 0.1 | 0.1 |
| 06/30/2018 | 0.00 | N/A | 0.3 | 0.3 |
| 06/30/2019 | 0.00 | N/A | 0.4 | 0.4 |

Hypothetical Termination Liability

The hypothetical termination liability is an estimate of the financial position of the plan had the contract with CalPERS been terminated as of June 30, 2019. The plan liability on a termination basis is calculated differently compared to the plan's ongoing funding liability. For the hypothetical termination liability calculation, both compensation and service are frozen as of the valuation date and no future pay increases or service accruals are assumed. This measure of funded status is not appropriate for assessing the need for future employer contributions in the case of an ongoing plan, that is, for an employer that continues to provide CalPERS retirement benefits to active employees.

A more conservative investment policy and asset allocation strategy was adopted by the CalPERS Board for the Terminated Agency Pool. The Terminated Agency Pool has limited funding sources since no future employer contributions will be made. Therefore, expected benefit payments are secured by risk-free assets and benefit security for members is increased while limiting the funding risk. However, this asset allocation has a lower expected rate of return than the PERF and consequently, a lower discount rate is assumed. The lower discount rate for the Terminated Agency Pool results in higher liabilities for terminated plans.

The effective termination discount rate will depend on actual market rates of return for risk-free securities on the date of termination. As market discount rates are variable, the table below shows a range for the hypothetical termination liability based on the lowest and highest interest rates observed during an approximate 19-month period from 12 months before the valuation date to 7 months after.

| Market Value of Assets (MVA) | Hypothetical Termination Liability^{1,2} @ 1.75% | Funded Status | Unfunded Termination Liability @ 1.75% | Hypothetical Termination Liability^{1,2} @ 3.25% | Funded Status | Unfunded Termination Liability @ 3.25% |
|-------------------------------------|---|----------------------|---|---|----------------------|---|
| \$40,504 | \$93,252 | 43.4% | \$52,748 | \$55,695 | 72.7% | \$15,191 |

¹ The hypothetical liabilities calculated above include a 5% mortality contingency load in accordance with Board policy. Other actuarial assumptions can be found in Appendix A of the Section 2 report.

² The current discount rate assumption used for termination valuations is a weighted average of the 10-year and 30-year U.S. Treasury yields where the weights are based on matching asset and liability durations as of the termination date. The discount rates used in the table are based on 20-year Treasury bonds, rounded to the nearest quarter percentage point, which is a good proxy for most plans. The 20-year Treasury yield was 2.31% on June 30, 2019, and was 1.83% on January 31, 2020.

In order to terminate the plan, you must first contact our Retirement Services Contract Unit to initiate a Resolution of Intent to Terminate. The completed Resolution will allow the plan actuary to give you a preliminary termination valuation with a more up-to-date estimate of the plan liabilities. CalPERS advises you to consult with the plan actuary before beginning this process.

Participant Data

The table below shows a summary of your plan's member data upon which this valuation is based:

| | June 30, 2018 | June 30, 2019 |
|---|----------------------|----------------------|
| Reported Payroll | \$85,562 | \$100,955 |
| Projected Payroll for Contribution Purposes | \$92,817 | \$109,515 |
| Number of Members | | |
| Active | 2 | 2 |
| Transferred | 0 | 0 |
| Separated | 0 | 0 |
| Retired | 0 | 0 |

List of Class 1 Benefit Provisions

This plan has the additional Class 1 Benefit Provisions:

- None

Plan's Major Benefit Options

Shown below is a summary of the major optional benefits for which your agency has contracted. A description of principal standard and optional plan provisions is in Section 2.

| Benefit Group | | |
|-----------------------------------|------------|--|
| Member Category | Misc | |
| Demographics | | |
| Actives | Yes | |
| Transfers/Separated | No | |
| Receiving | No | |
| Benefit Provision | | |
| Benefit Formula | 2% @ 62 | |
| Social Security Coverage | Yes | |
| Full/Modified | Full | |
| Employee Contribution Rate | 6.75% | |
| Final Average Compensation Period | Three Year | |
| Sick Leave Credit | Yes | |
| Non-Industrial Disability | Standard | |
| Industrial Disability | No | |
| Pre-Retirement Death Benefits | | |
| Optional Settlement 2 | Yes | |
| 1959 Survivor Benefit Level | No | |
| Special | No | |
| Alternate (firefighters) | No | |
| Post-Retirement Death Benefits | | |
| Lump Sum | \$3000 | |
| Survivor Allowance (PRSA) | No | |
| COLA | 2% | |

PEPRA Member Contribution Rates

The California Public Employees' Pension Reform Act of 2013 (PEPRA) established new benefit formulas, final compensation period, and contribution requirements for "new" employees (generally those first hired into a CalPERS-covered position on or after January 1, 2013). In accordance with Government Code Section 7522.30(b), "new members ... shall have an initial contribution rate of at least 50% of the normal cost rate." The normal cost rate is dependent on the plan of retirement benefits, actuarial assumptions and demographics of the risk pool, particularly members' entry age. Should the total normal cost rate change by more than 1% from the base total normal cost rate, the new member rate shall be 50% of the new normal cost rate rounded to the nearest quarter percent.

The table below shows the determination of the PEPRA member contribution rates effective July 1, 2021, based on 50% of the total normal cost rate as of the June 30, 2019 valuation.

| Rate Plan Identifier | Benefit Group Name | Basis for Current Rate | | Rates Effective July 1, 2021 | | | |
|----------------------|---------------------------|------------------------|-------------|------------------------------|--------|---------------|-------------|
| | | Total Normal Cost | Member Rate | Total Normal Cost | Change | Change Needed | Member Rate |
| 27072 | Miscellaneous PEPRA Level | 13.735% | 6.75% | 14.34% | 0.605% | No | 6.75% |

Section 2

CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM

Risk Pool Actuarial Valuation Information

**Section 2 may be found on the CalPERS website
(www.calpers.ca.gov) in the Forms and
Publications section**



SAN BERNARDINO VALLEY WATER CONSERVATION DISTRICT

Established 1932

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Memorandum No. 1353

To: Board of Directors

From: Finance & Administration Committee/General Manager, Daniel Cozad

Date: August 12, 2015

Subject: CalPERS Unfunded Liability Payoff

RECOMMENDATION

The Finance & Administration Committee recommends the Board review and considers approval of the transfer of up to \$750,000.00 from District reserves to CalPERS for payment in full of the District's Unfunded Liability. Authorize and direct the General Manager to coordinate final payoff amount and implement this payment outside the Operating Reserve and Budget authorized by the Board.

BACKGROUND

In 2012 the District took action to pay off the CalPERS side loan related to the 2005 retirement plan consolidation. In 2014, CalPERS implemented the Public Employees' Pension Reform Act of 2013 (PEPRA). PEPRA compliance required the consolidation of all employer pools and creation of new pools for current and future (after 1/1/2013) employees. When these risk pools were established, CalPERS assigned each entity in the pool their share of the unfunded liability, and assessed an interest rate of 7.5% annually, the same rate of return they assume on investments. In August of 2014, CalPERS approved the allocation and provided the actuarial allocation of these costs. They also authorized agencies to pay off their estimated unfunded actuarial liability (UAL). This creates an opportunity for the District to save money in future years in a manner similar to the side note paid off in 2012. Additionally, the UAL will begin being reported this separately and will become part of the audit reported liabilities under GASB 45 and 68.

DISCUSSION AND CONSIDERATIONS

For the District our share of the unfunded liability is estimated at approximately \$747,000 as of June 30, 2015. The actual amount estimated will be undated in a report to be received in late July or early August. Contributions to repay this liability over 30 years are included in the Districts annual CalPERS rate and included each year in the District budget. Currently the CalPERS rate is 16.162% of average annual payroll. Beginning this year the dollar amount of the UAL will be charged separately from payroll percentage.

BOARD
OF
DIRECTORS

Division 1:
Richard Corneille
Division 2:
David E. Raley

Division 3:
Manual Aranda, Jr.
Division 4:
John Longville

Division 5:
Melody McDonald

GENERAL
MANAGER

Daniel B. Cozad

The current contribution for retirement benefits is 9.671% of payroll. The remaining 6.491% is the 30 year payoff of the UAL at 7.5% interest.

Currently the District receives about 0.53% interest on the majority of its reserve assets in CalTrust. The District would be paying about \$33,000 to CalPERS while earning about \$3,800 on the same funds invested in CalTrust for the year. By paying off the UAL the District would save approximately \$1,119,700. In interest and approximately \$37,300 on average annually for the remaining 29 years, if CalPERS rates are kept at 7.50%. Other payoff amounts are possible if the Board wishes to pay off less than the entire UAL.

CalPERS Actuarial Staff have estimated the payoff would reduce the Districts CalPERS costs by approximately 6.5%. If approved by the Board staff will request letter stipulating the payoff as of August 2015. In addition to reducing the CalPERS costs the payoff of the side loan would allow the District to report no UAL in its annual audit.

FISCAL IMPACT

The District would see a reduction in reserves in the amount of between \$710,000 and \$750,000 for Fiscal Year 2015/2016 but this would offset the forthcoming liability for UAL. The actual payoff is based on the actuarial report and payoff amount calculated by CalPERS, staff estimates that at \$713,706. The result would be less available reserves for the District but lower operating costs by at least \$33,399 per year and ultimately save approximately \$1,119,700 in principal and interest payments. Each enterprise would experience modest savings due to the action reducing the CalPERS related payroll costs. Likewise each enterprise will receive a reduction in its reserve levels as shown in the table below.

Allocation of UAL Payoff to Enterprises

| Enterprise | Amount | % |
|------------------------|-------------------|----------|
| Land | \$ 142,741 | 20% |
| General Fund | \$ 214,112 | 30% |
| Groundwater | \$ 321,168 | 45% |
| Redlands Plaza | \$ 35,685 | 5% |
| Total Estimated | \$ 713,706 | |

This action reduced the debt of the District in accordance with the Pay-As-You-Go plan to operate with very limited debt. This action will also reduce the Districts reliance on annual revenue. This cost is not included in the approved 2015/2016 budget and obligates reserves outside the Operating Reserve level established by the Board.

| Reserve Level Adjustments | | | | | | | CalPers UAL |
|---|--------------|------------|----------------|----------|------------|------|---------------|
| | | | | | | | \$ 387,402 |
| Reserve | Target | New Target | Balance | % Funded | Reduction | % | Balance |
| Groundwater Recharge Enterprise Reserve | \$1,250,000 | | \$2,503,621 | 199% | \$174,331 | 45% | \$2,329,290 |
| Groundwater ER Maintenance Reserve | \$250,000 | | \$350,000 | 140% | \$0 | | \$350,000 |
| GWA Rate Stabilization | \$200,000 | | \$177,777 | 100% | \$0 | | \$177,777 |
| Redlands Plaza Reserve | \$81,418 | | \$85,192 | 105% | \$38,740 | 10% | \$46,452 |
| Land Resources Reserve | \$816,743 | | \$ (2,909,633) | -356% | \$77,480 | 20% | (\$2,987,113) |
| General Liability Fund Reserve | \$1,250,000 | | \$559,067 | 45% | \$58,110 | 15% | \$500,957 |
| Self Insurance Reserve | \$50,000 | | \$40,000 | 80% | \$0 | | \$40,000 |
| Compensated Absences Reserve | \$120,227 | \$175,000 | \$107,000 | 89% | \$0 | | \$107,000 |
| Capital Improvement/Equipment Reserve | \$750,000 | | \$760,000 | 101% | \$0 | | \$760,000 |
| Prepaid Royalties Reserve | \$5,000,000 | | \$5,000,000 | 100% | \$0 | | \$5,000,000 |
| Active Recharge Transfer Projects | \$36,875,000 | | \$18,485,460 | 50% | \$38,740 | 10% | \$18,446,720 |
| Total All Allocated Reserves | \$46,643,388 | | \$25,158,484 | 54% | \$ 387,402 | 100% | \$24,771,082 |